R E P O R T   R E S U M E S

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22 CHARTS TO ACCOMPANY PEACETIME RADIATION HAZARDS IN THE FIRE SERVICE--BASIC COURSE.

OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
REPORT NUMBER OE-84022 PUB DATE 61
ATOMIC ENERGY COMMISSION, WASHINGTON, D.C.
EDRS PRICE MF-~~$0.50~~ HC NOT AVAILABLE FROM EDRS. 89P.
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DESCRIPTORS- *CHARTS, *FIRE FIGHTERS, *RADIATION, *TRADE AND INDUSTRIAL EDUCATION,

A SET OF TWENTY-TWO 20-BY-28 INCH CHARTS ILLUSTRATING ASPECTS OF RADIATION SUCH AS TYPES, EFFECTS OF EXPOSURE, SHIELDS, WARNING SIGNS, REACTORS, THE CHAIN REACTION PROCESS, AND FIRE-FIGHTING PROCEDURES IS TO BE USED WITH (1) RESOURCE MANUAL (VT 001 337), (2) INSTRUCTOR'S GUIDE (VT 002 117), (3) STUDENT STUDY GUIDE (VT 001 878), (4) ORIENTATION UNIT--STUDENT MANUAL (VT 002 067), AND (5) ORIENTATION UNIT--INSTRUCTOR'S GUIDE (VT 001 989). THIS DOCUMENT IS AVAILABLE AS FS5.284--84022 FOR $2 A SET FROM SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20401. (PS)

22 charts to accompany

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OFFICE OF EDUCATION

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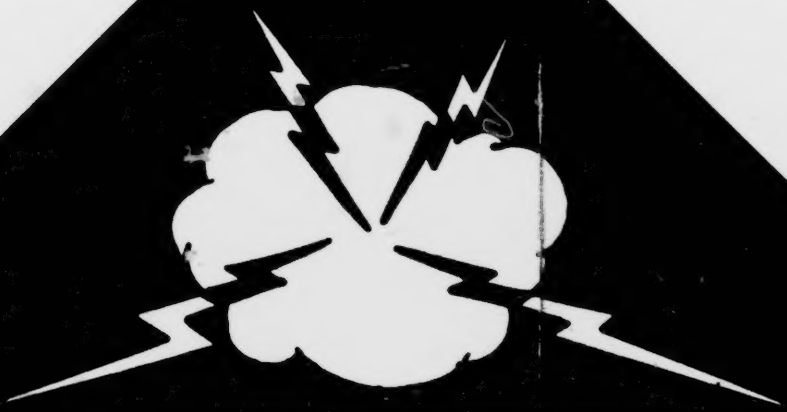

DO NOT PLACE UNDEVELOPED FILM WITHIN 5 METERS (15 FEET) OF THIS CONTAINER

RADIOACTIVE MATERIAL

GROUP I or II

NO PERSON SHALL REMAIN WITHIN 1 METER (3 FEET)
OF THIS CONTAINER UNNECESSARILY

PRINCIPAL RADIOACTIVE CONTENT..............

ACTIVITY OF CONTENTS...................

RADIATION UNITS THIS PACKAGE........

NOT MORE THAN 40 UNITS
SHALL BE LOADED IN ONE
AIRCRAFT OR HELD AT
ONE LOCATION
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S OF RADIATION WA

CAUTION

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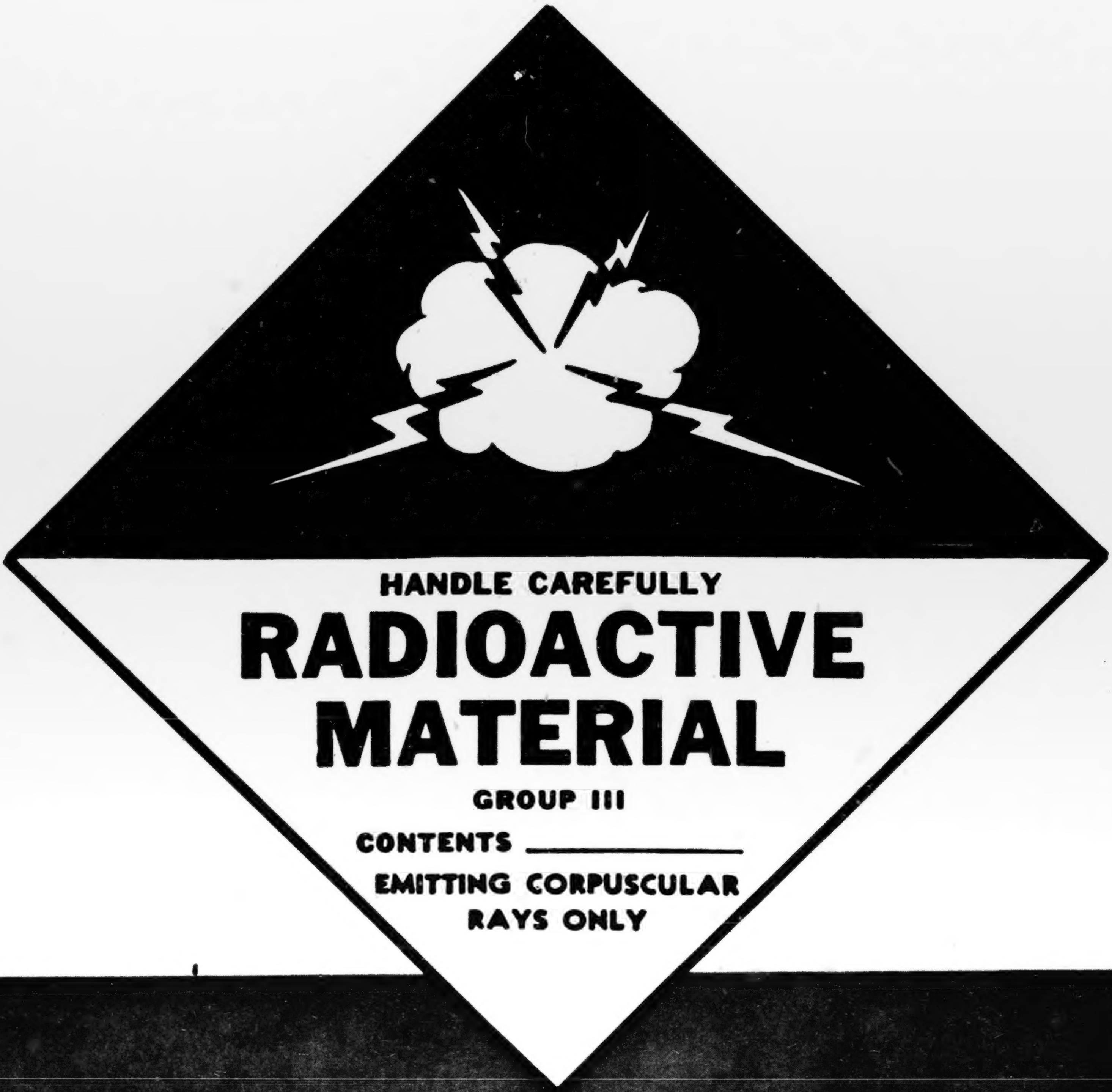

RNING SIGNS

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RADIATION HAZARD

PRECAUTIONS ____________________

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SAMPLES

DANGEROUS-
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PRINCIPAL RADIOACTIVE CONTENT______________
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NOT MORE THAN 40 UNITS
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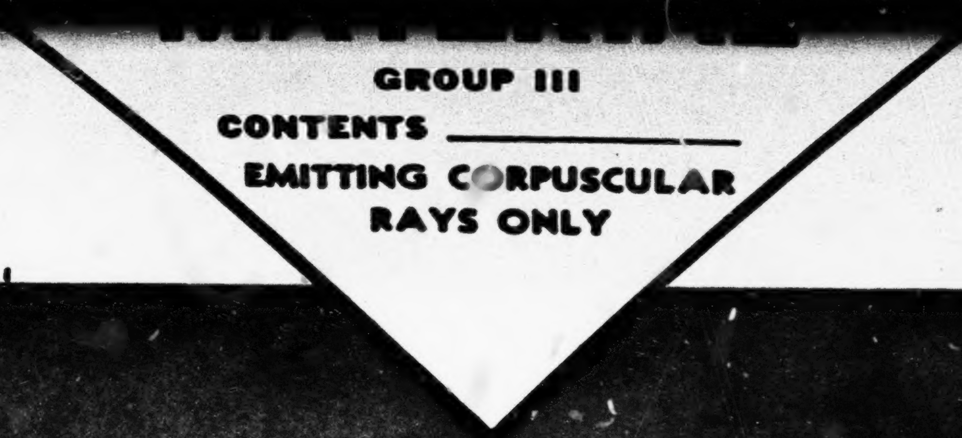
Peacetime Radiation Haz



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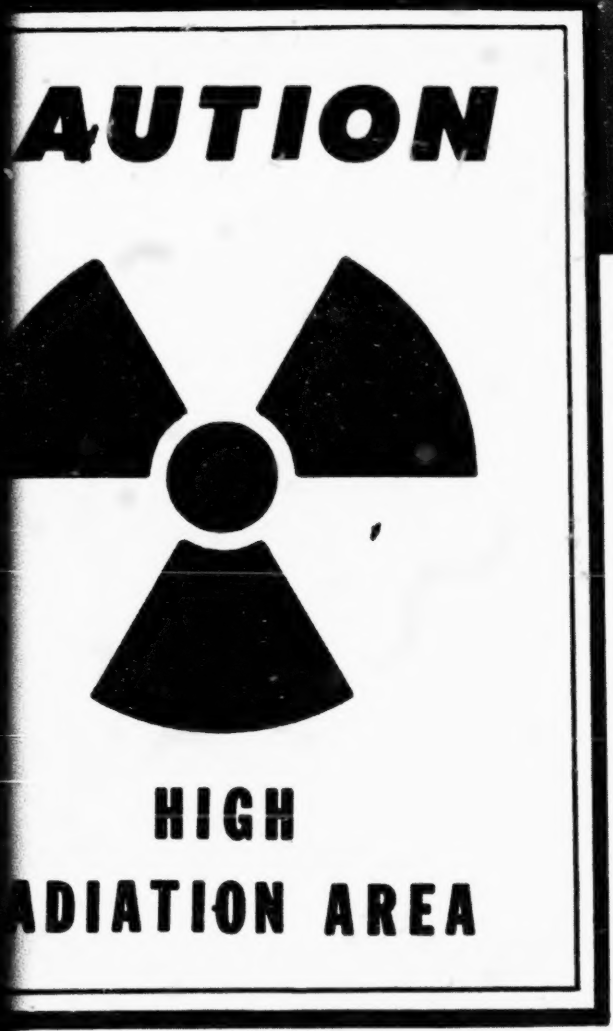

on Hazards in the Fire Service: Basic Course

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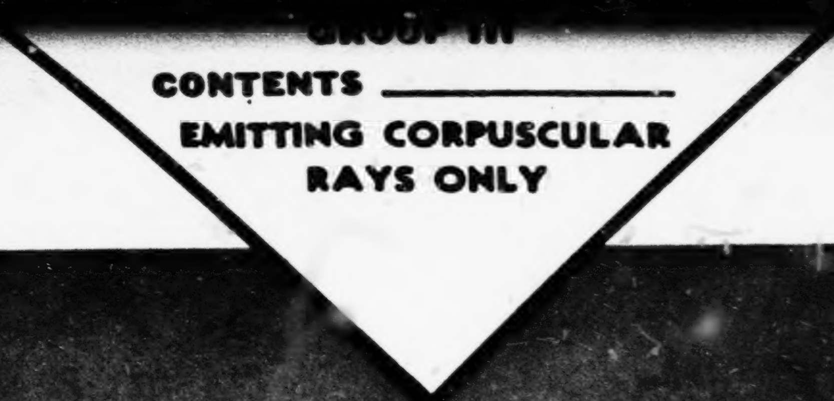

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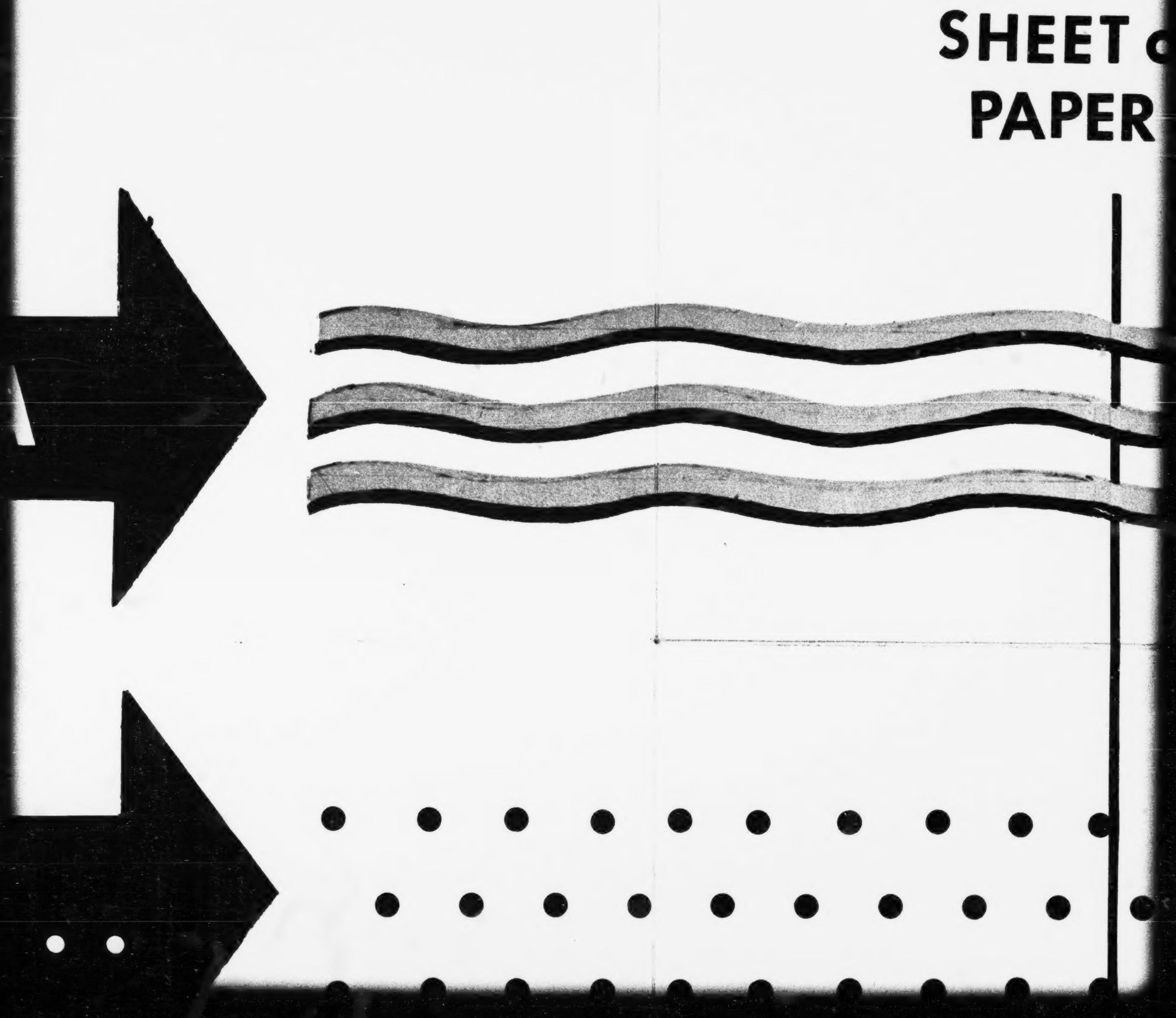

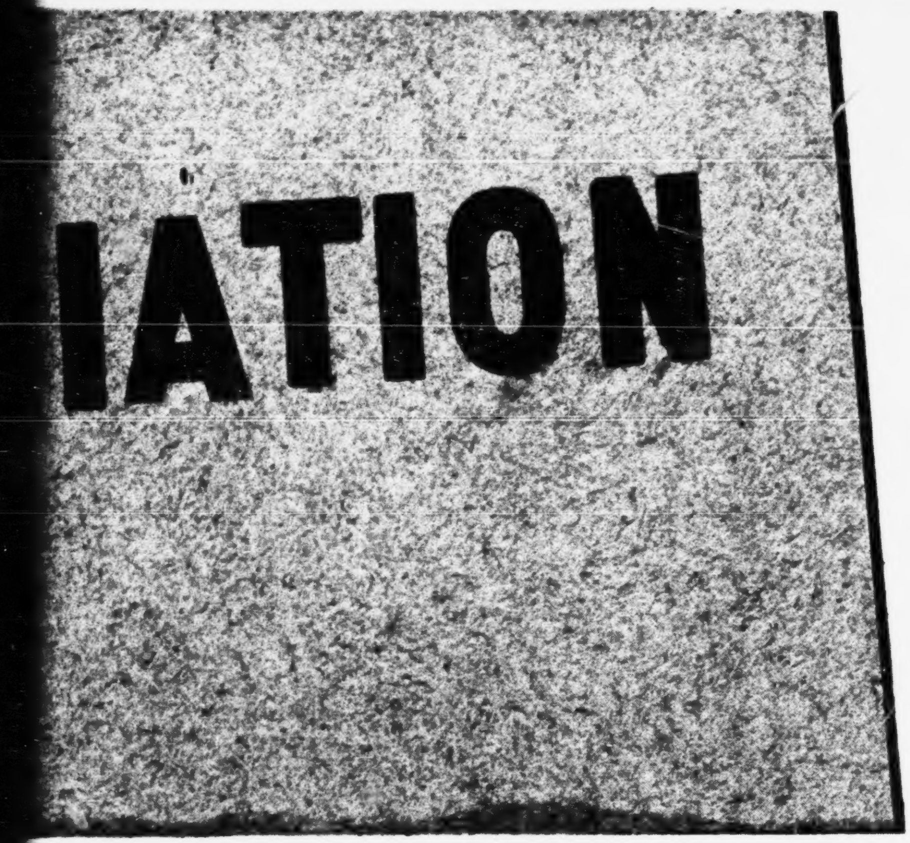

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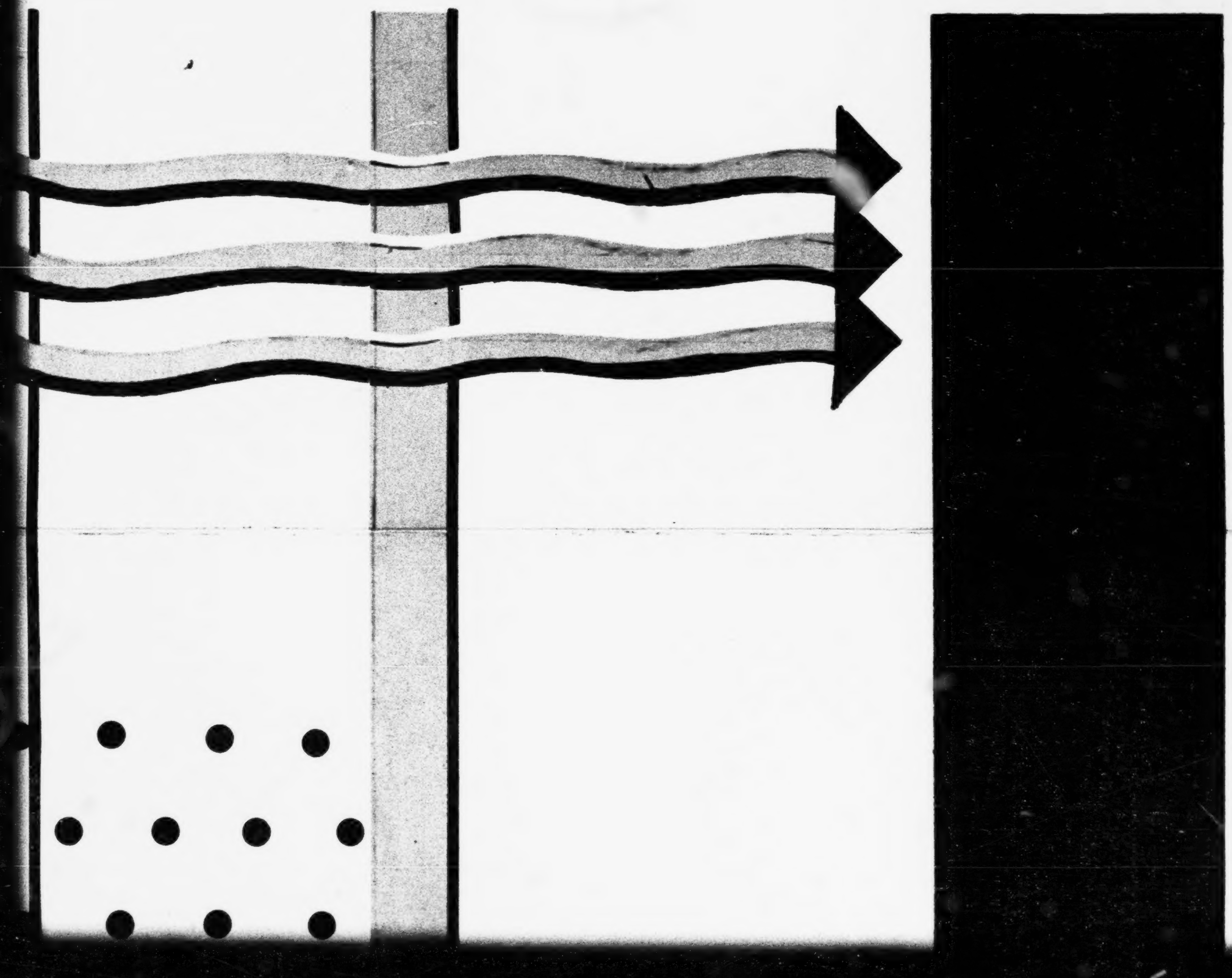

1-8 INCH ALUMINUM

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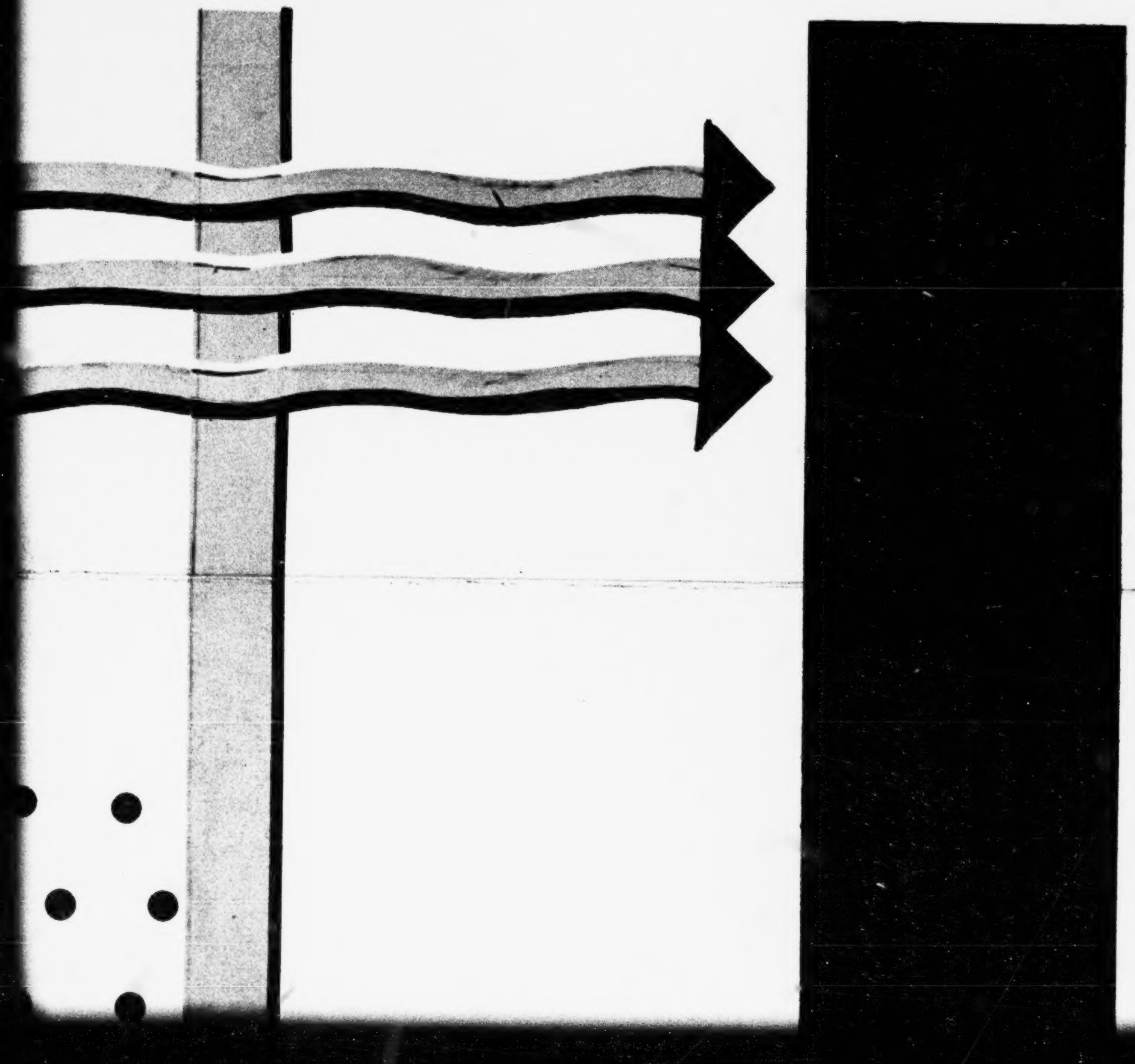

GAMMA

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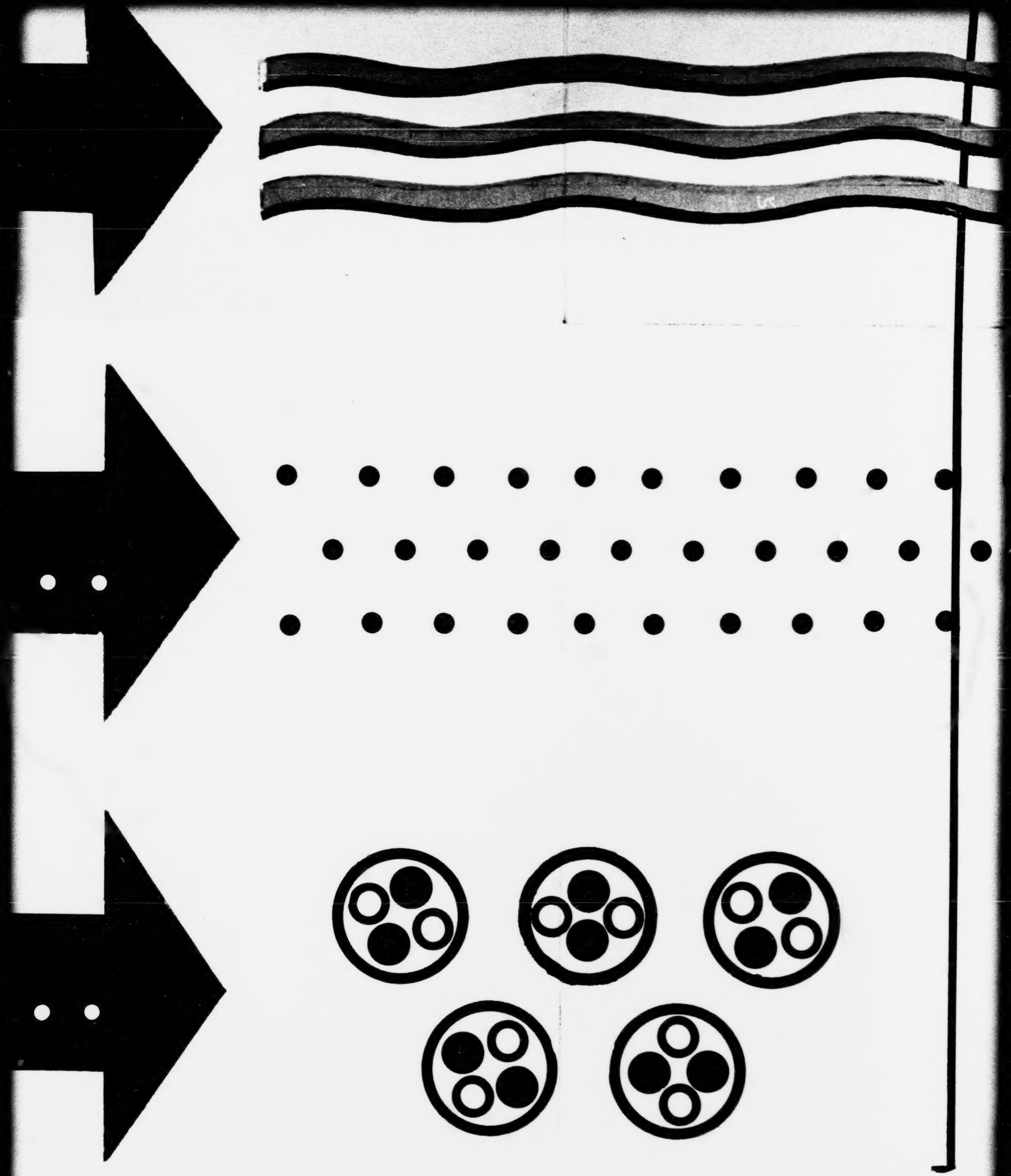

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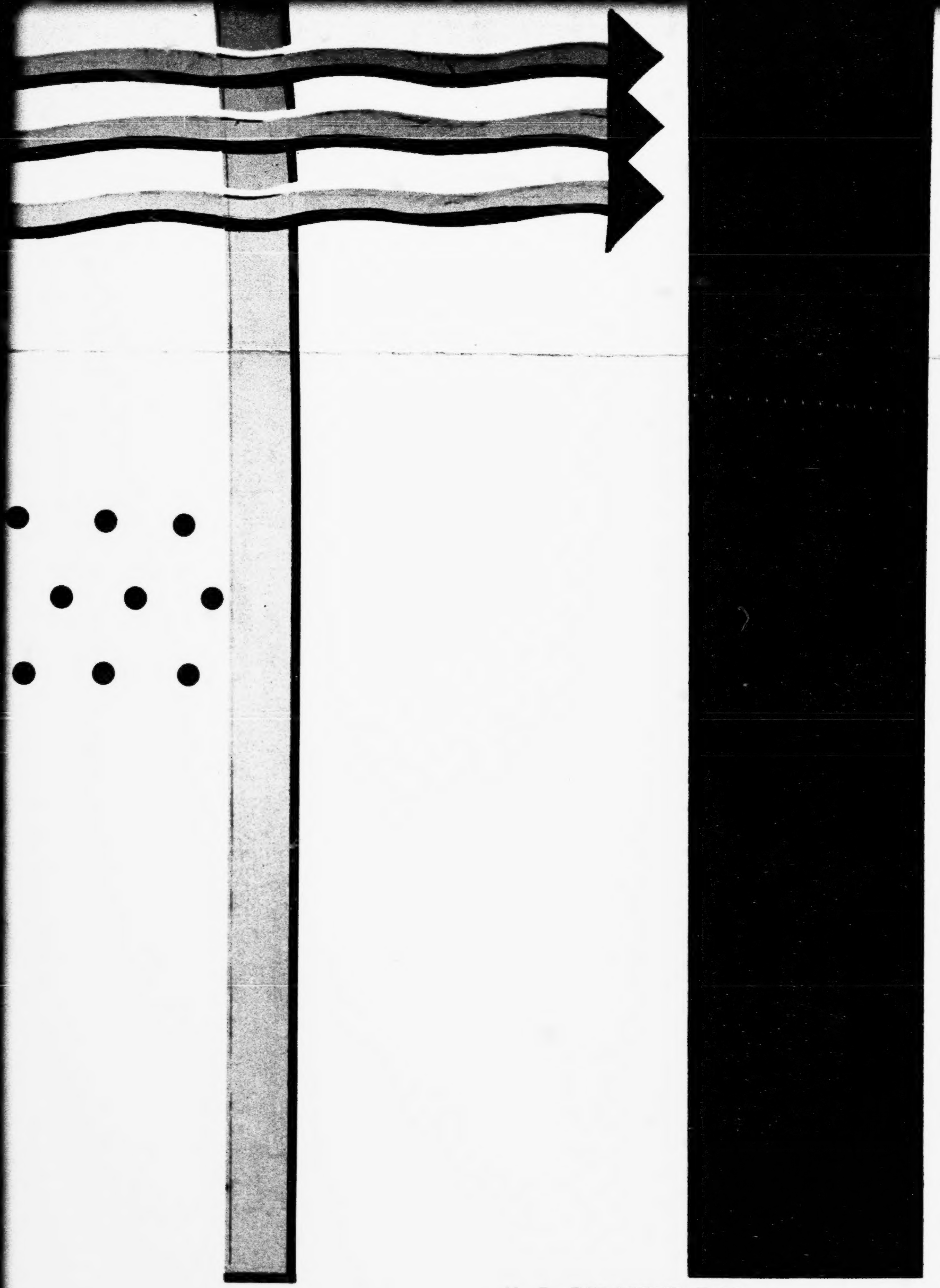

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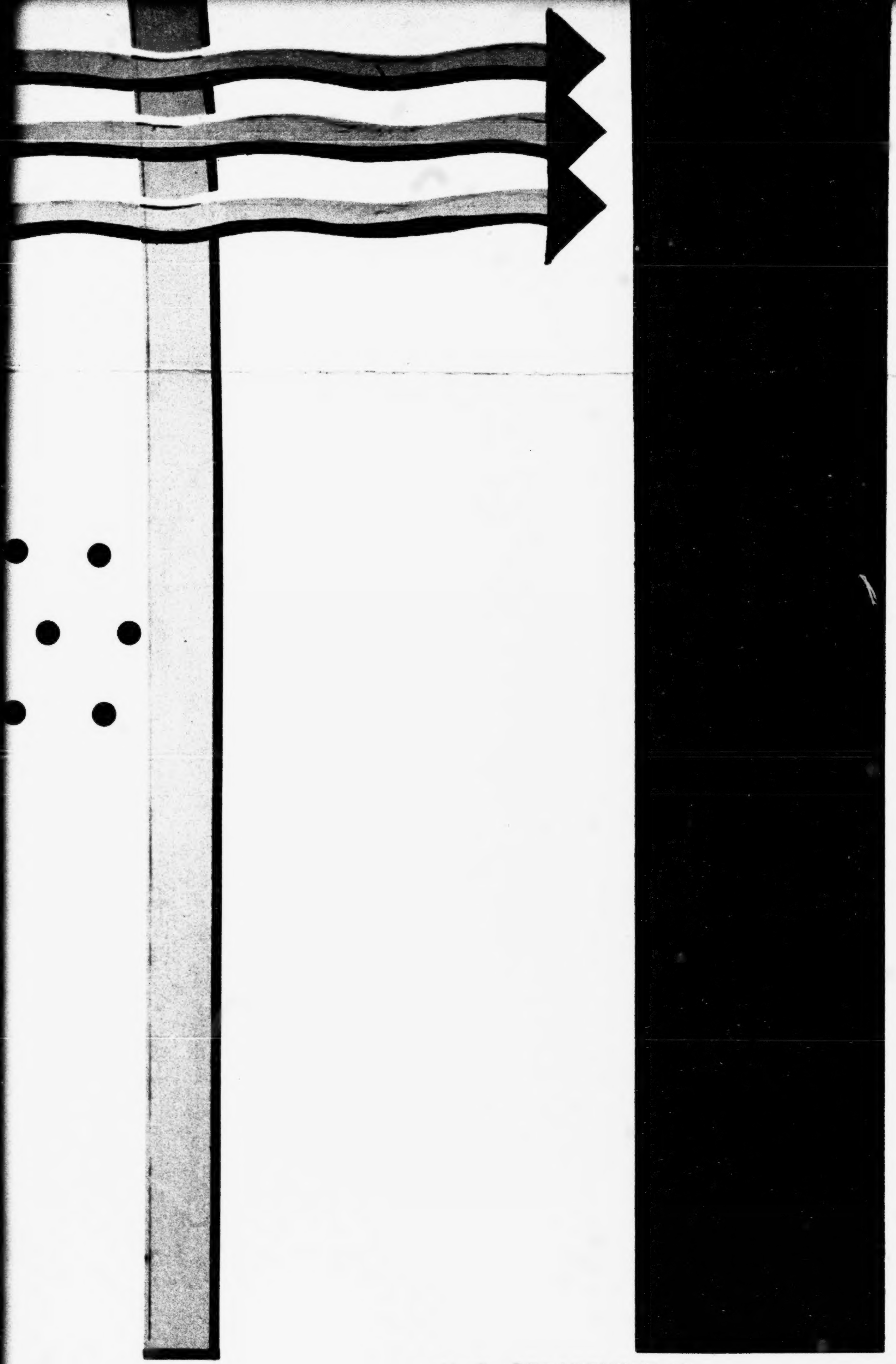

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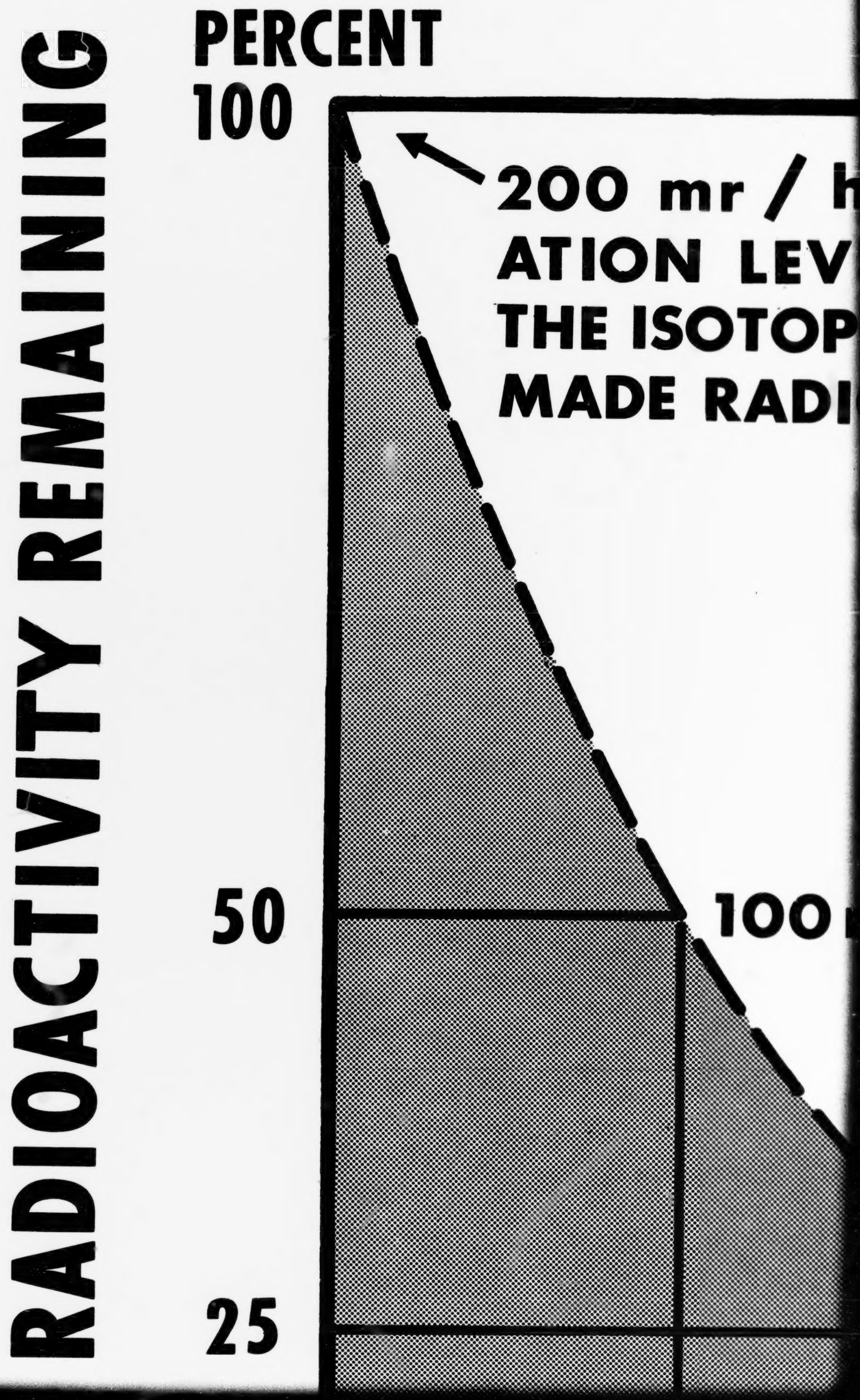
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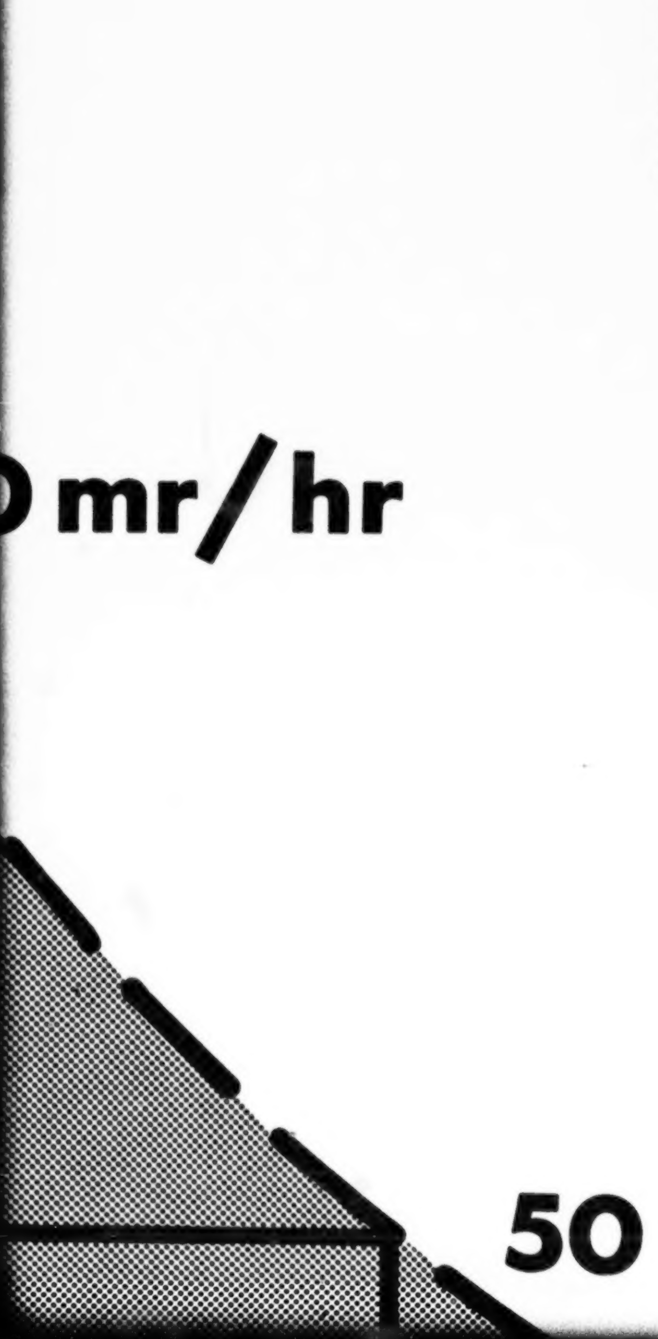

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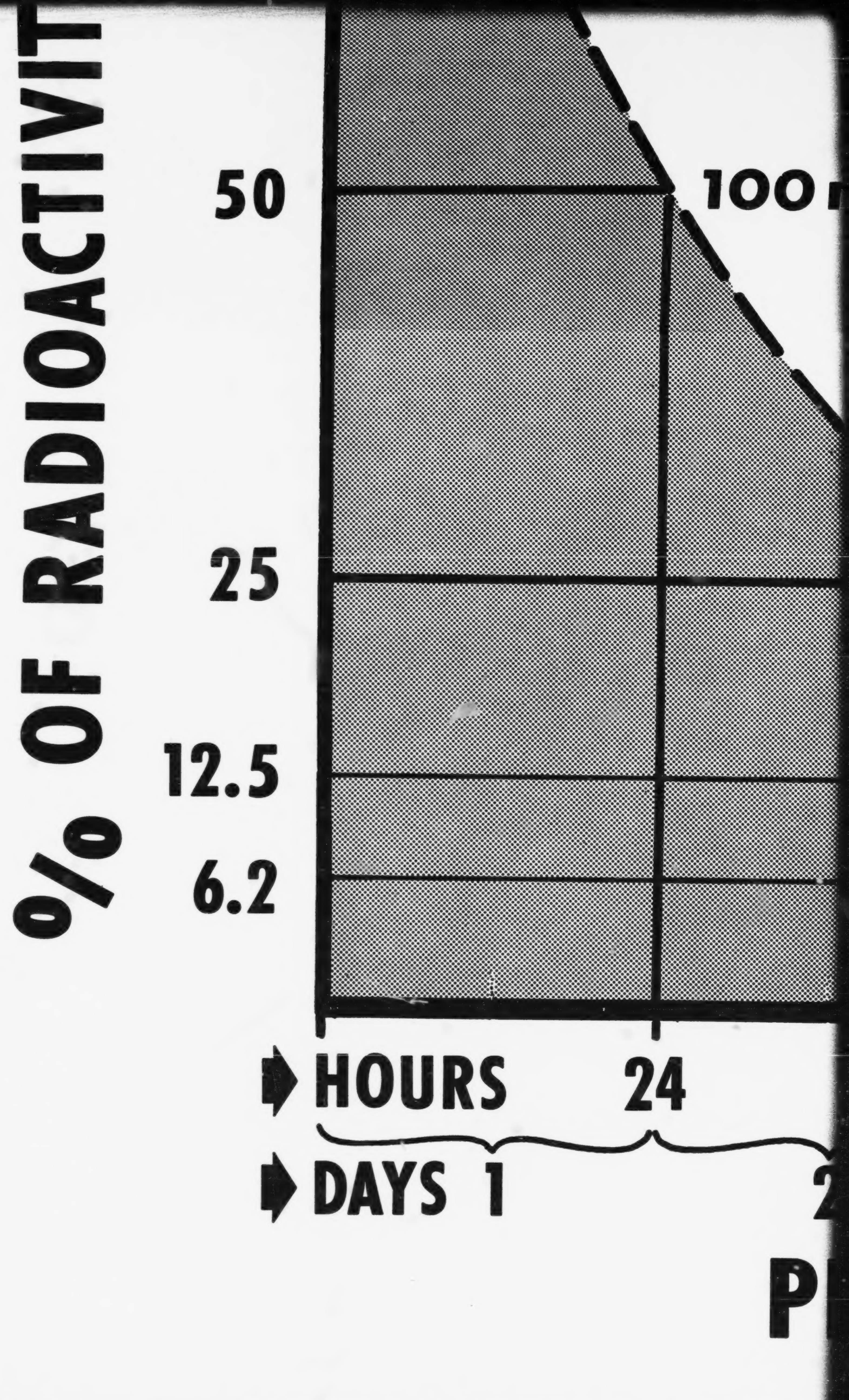
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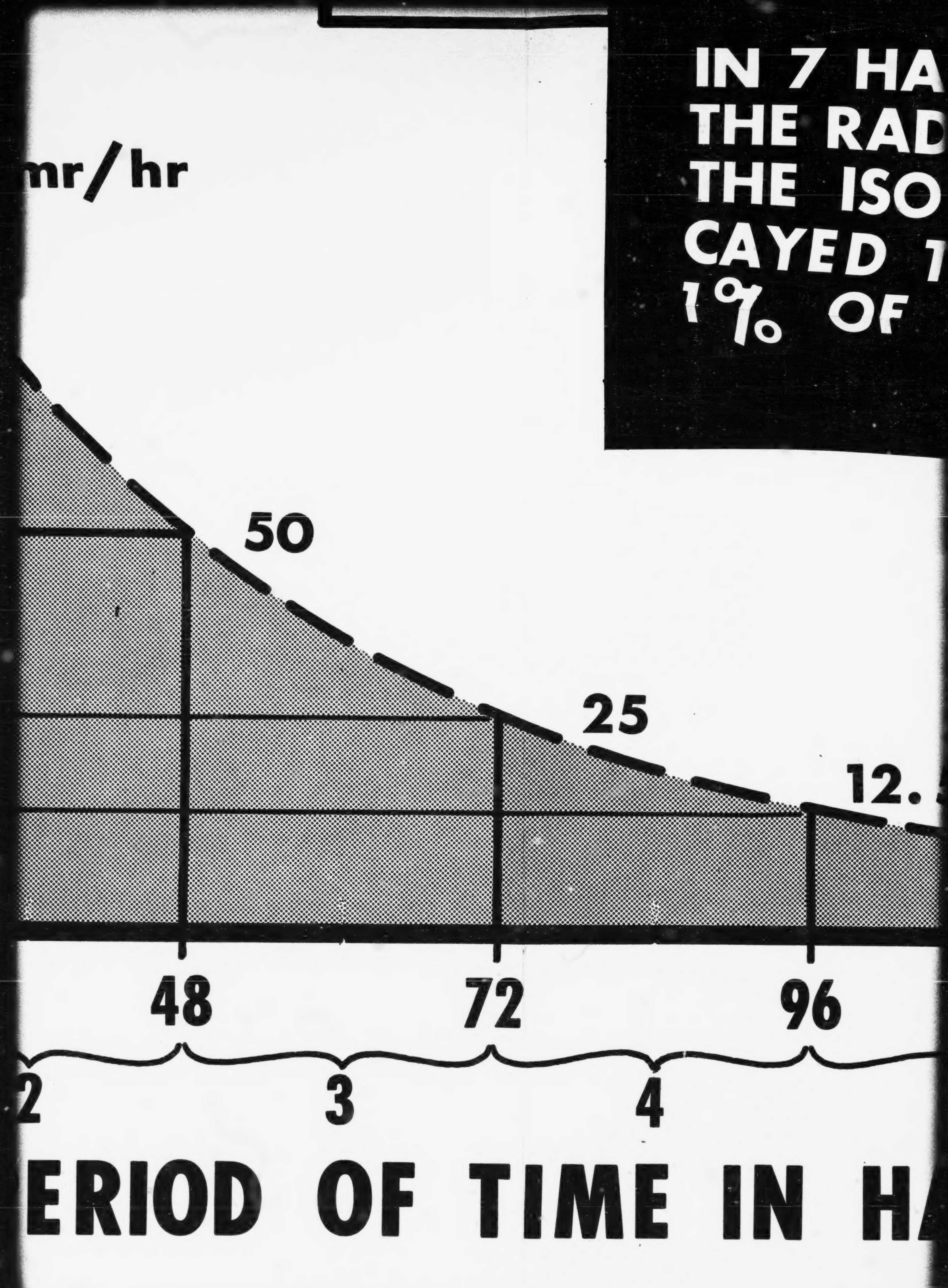

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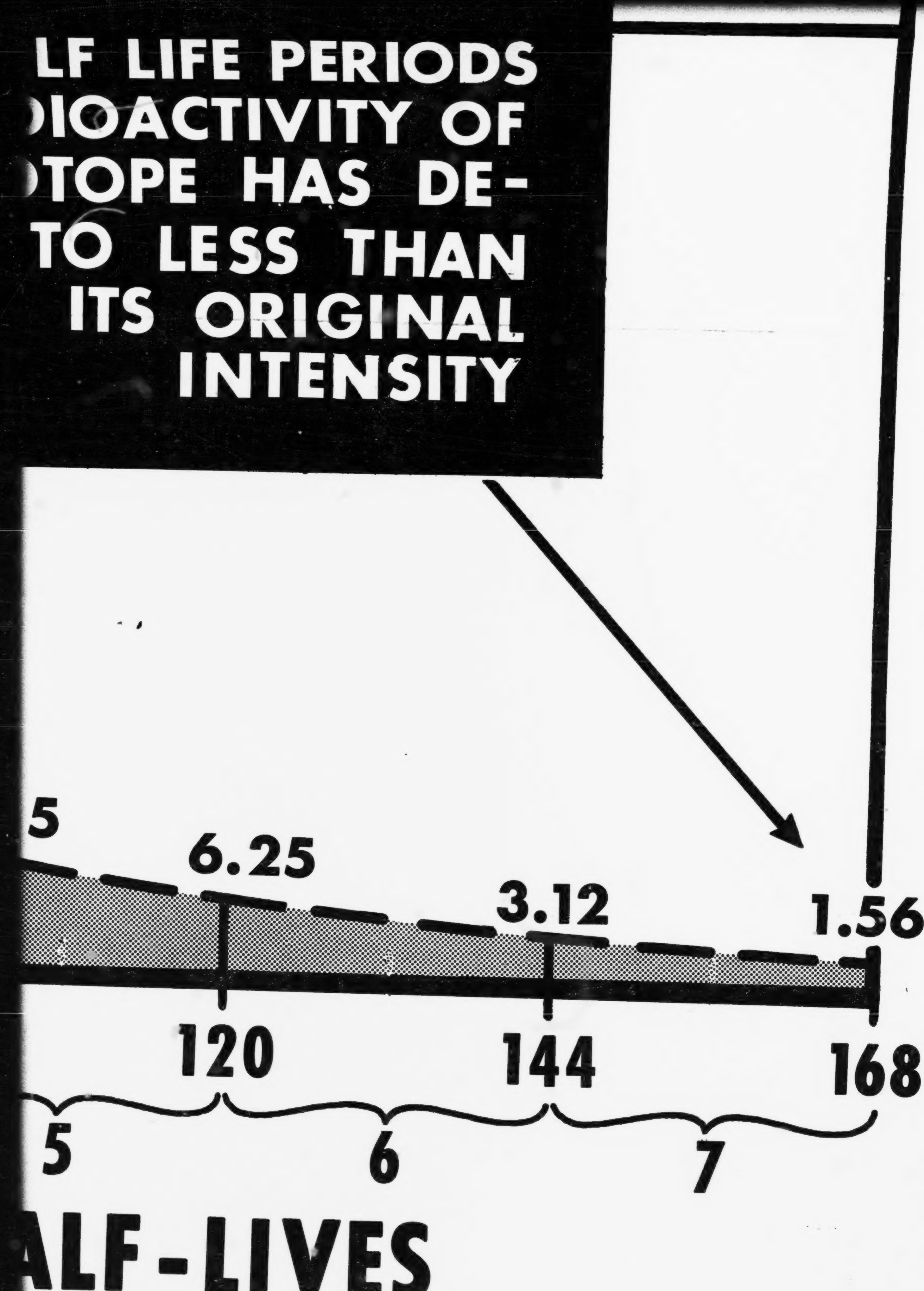

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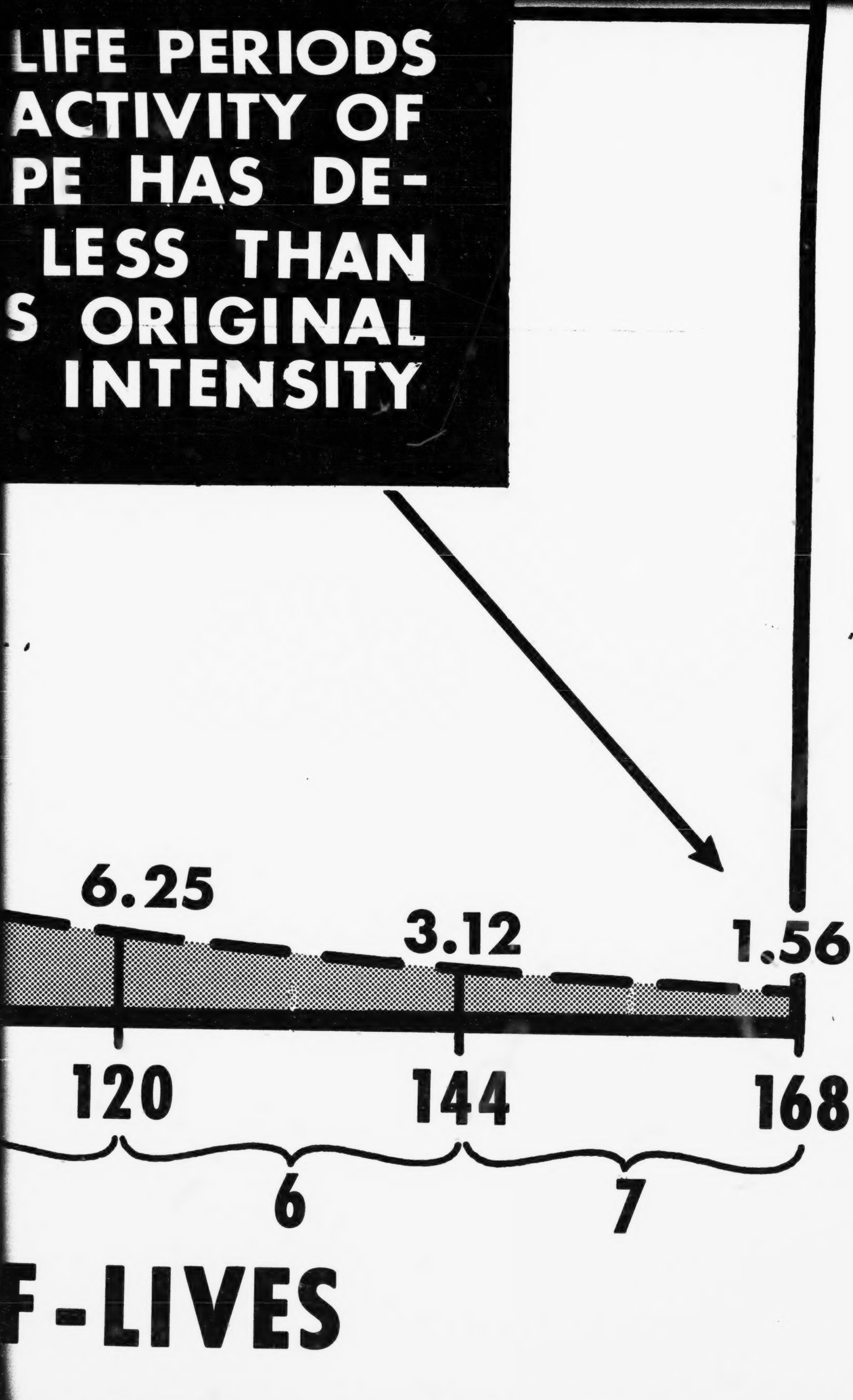
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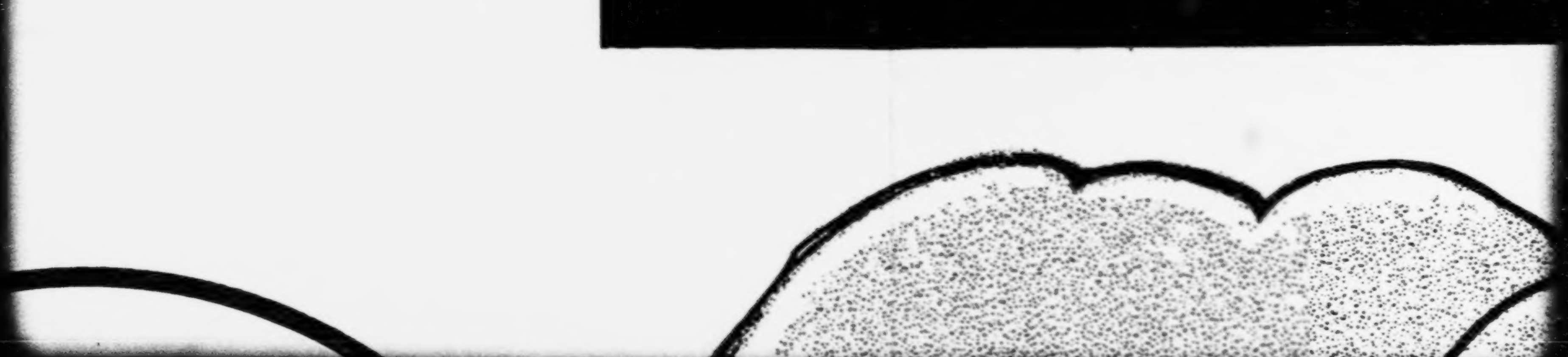

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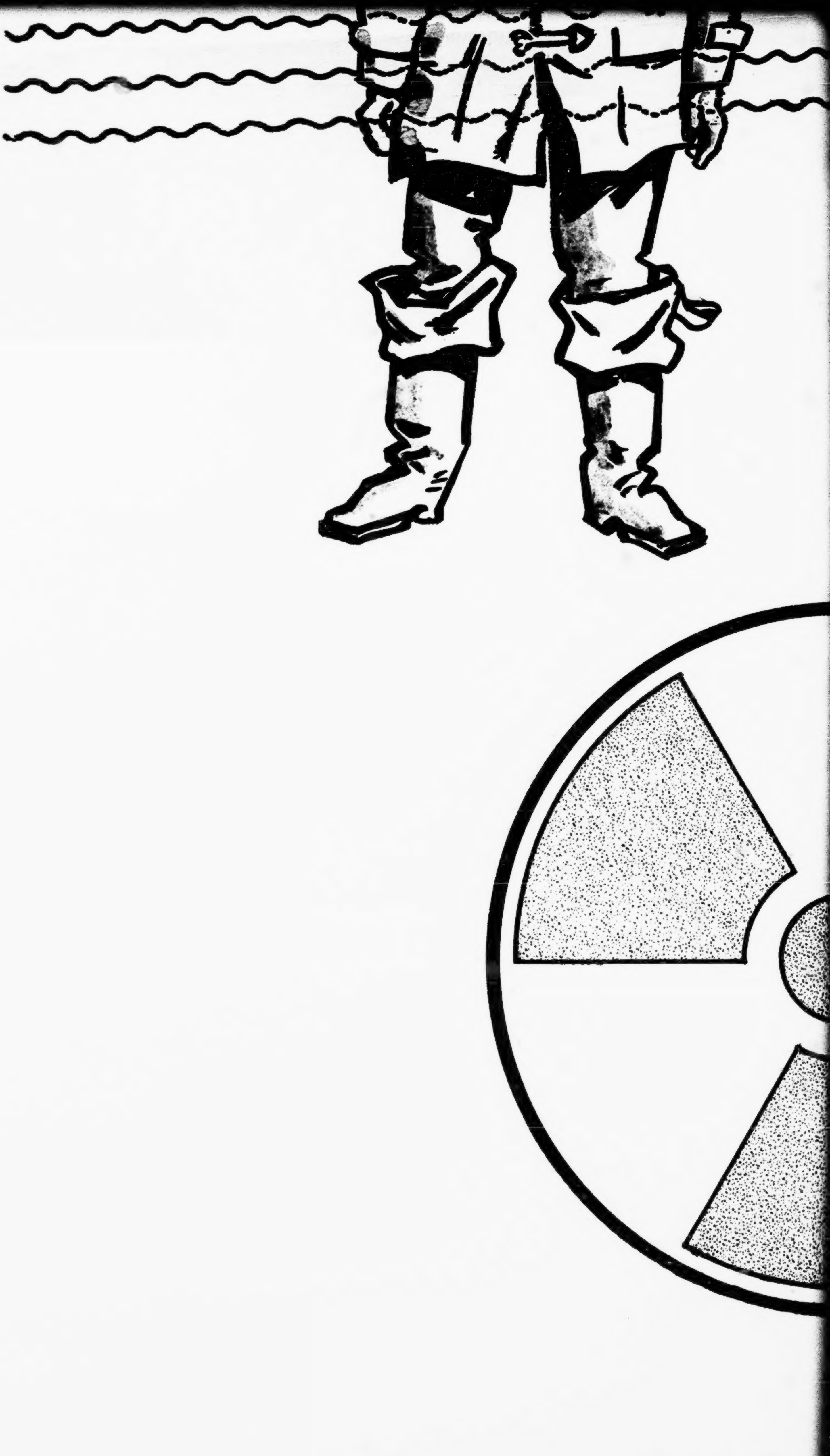

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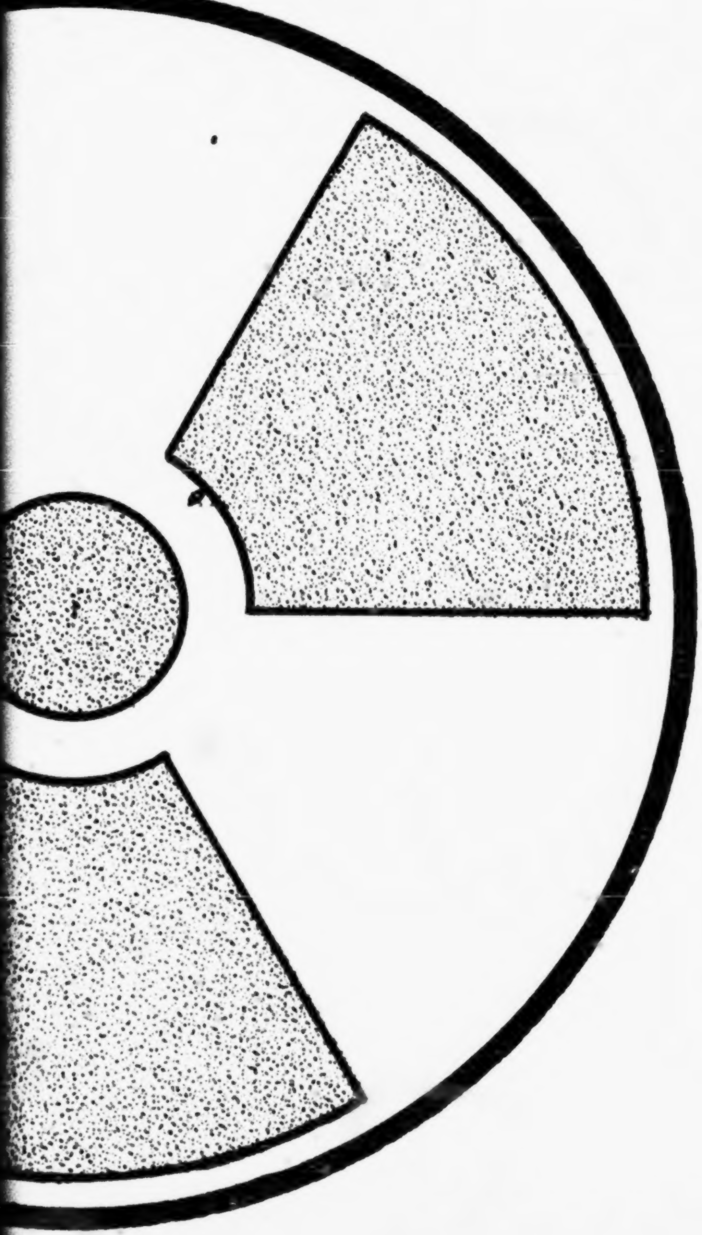

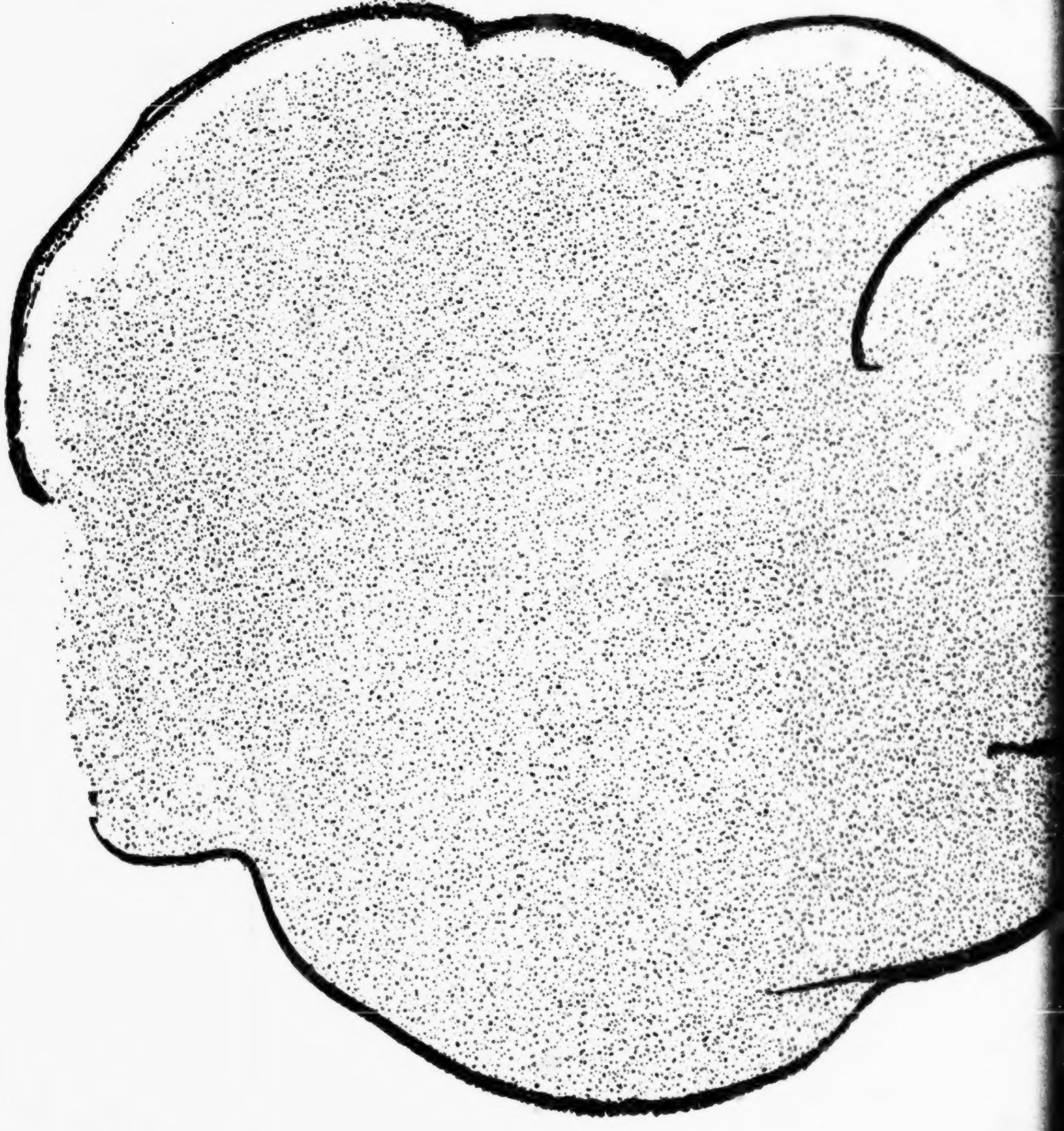

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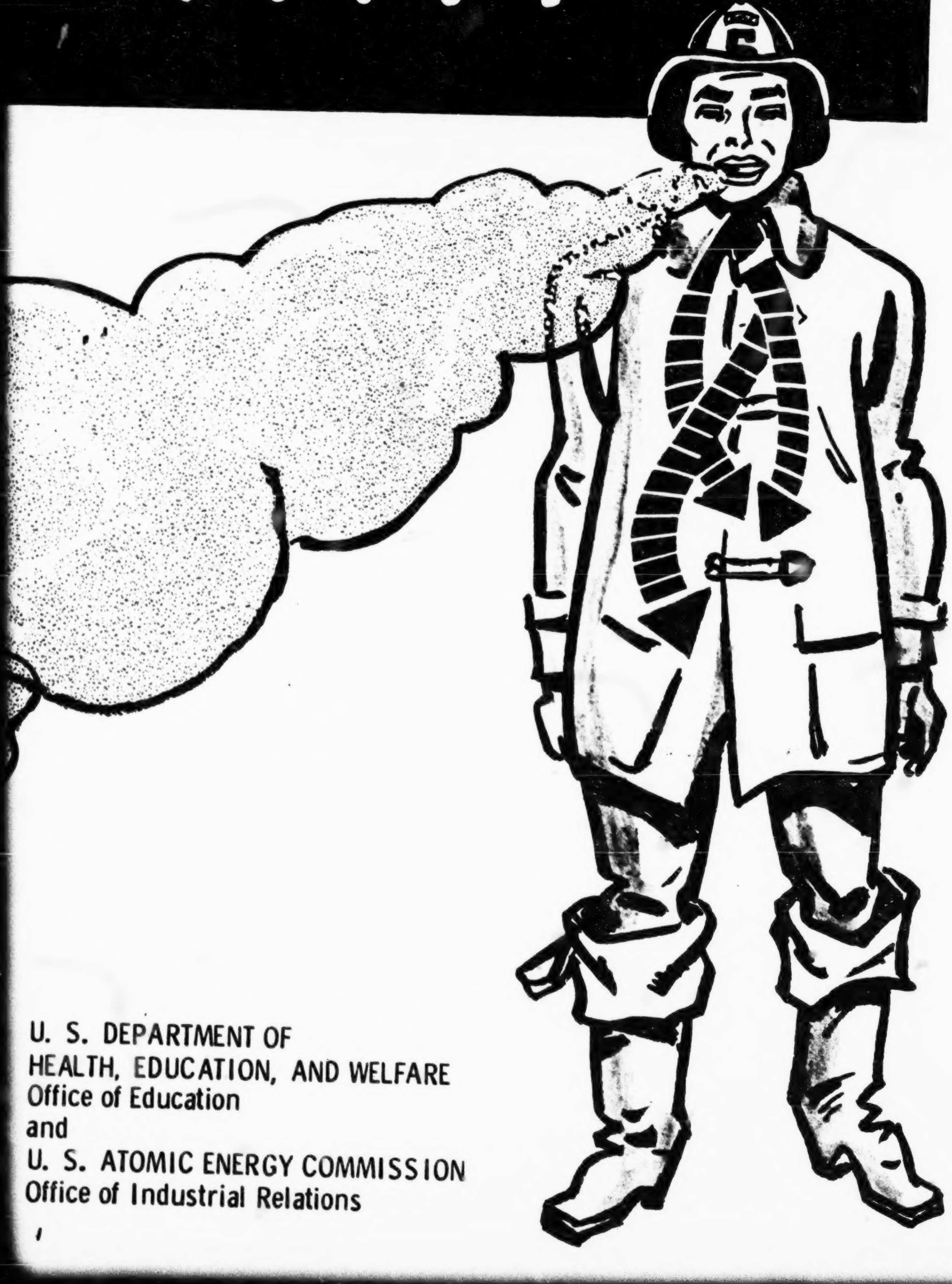

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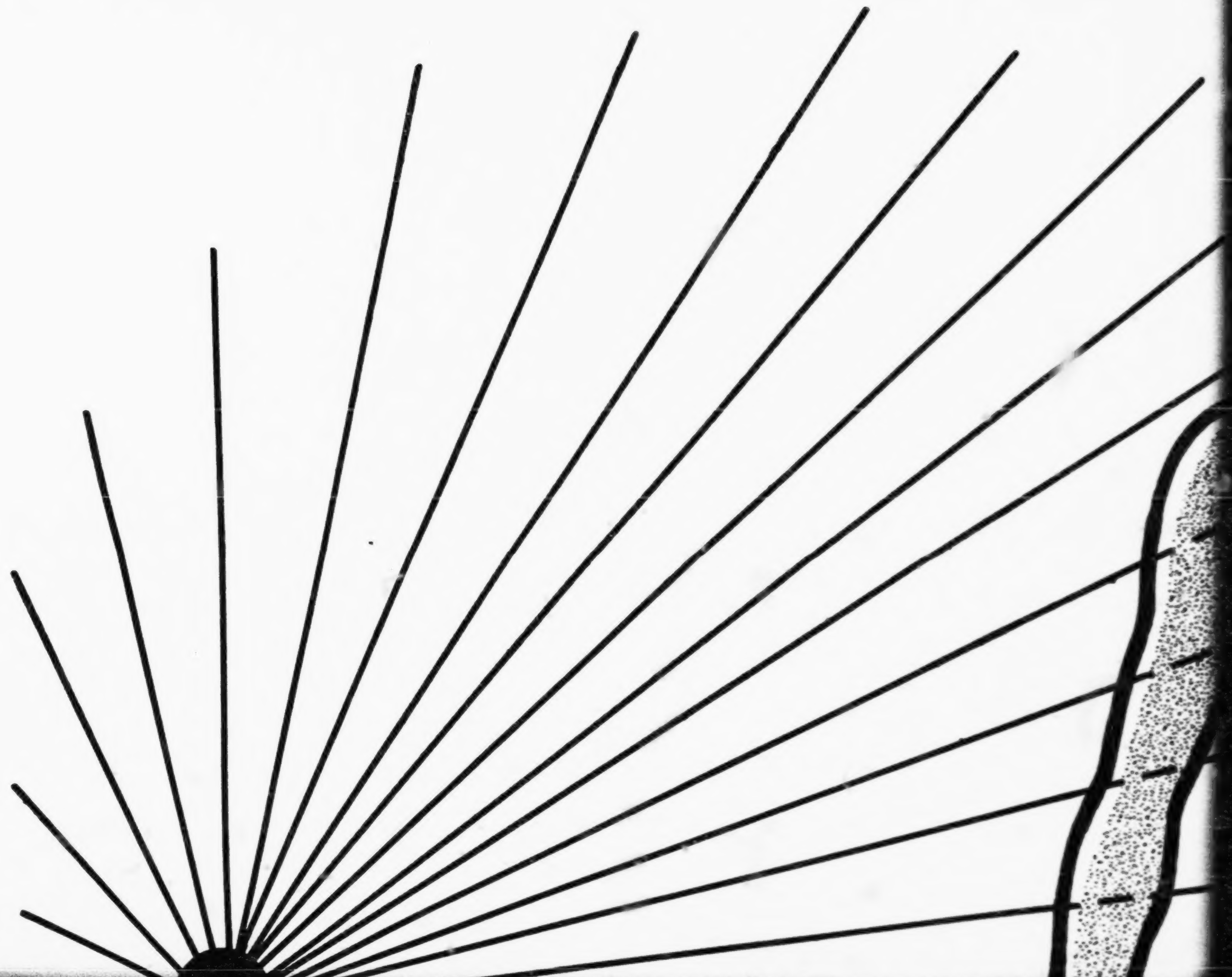
EFFECTS OF

LONG RANGE

GAMMA RAYS - GREA



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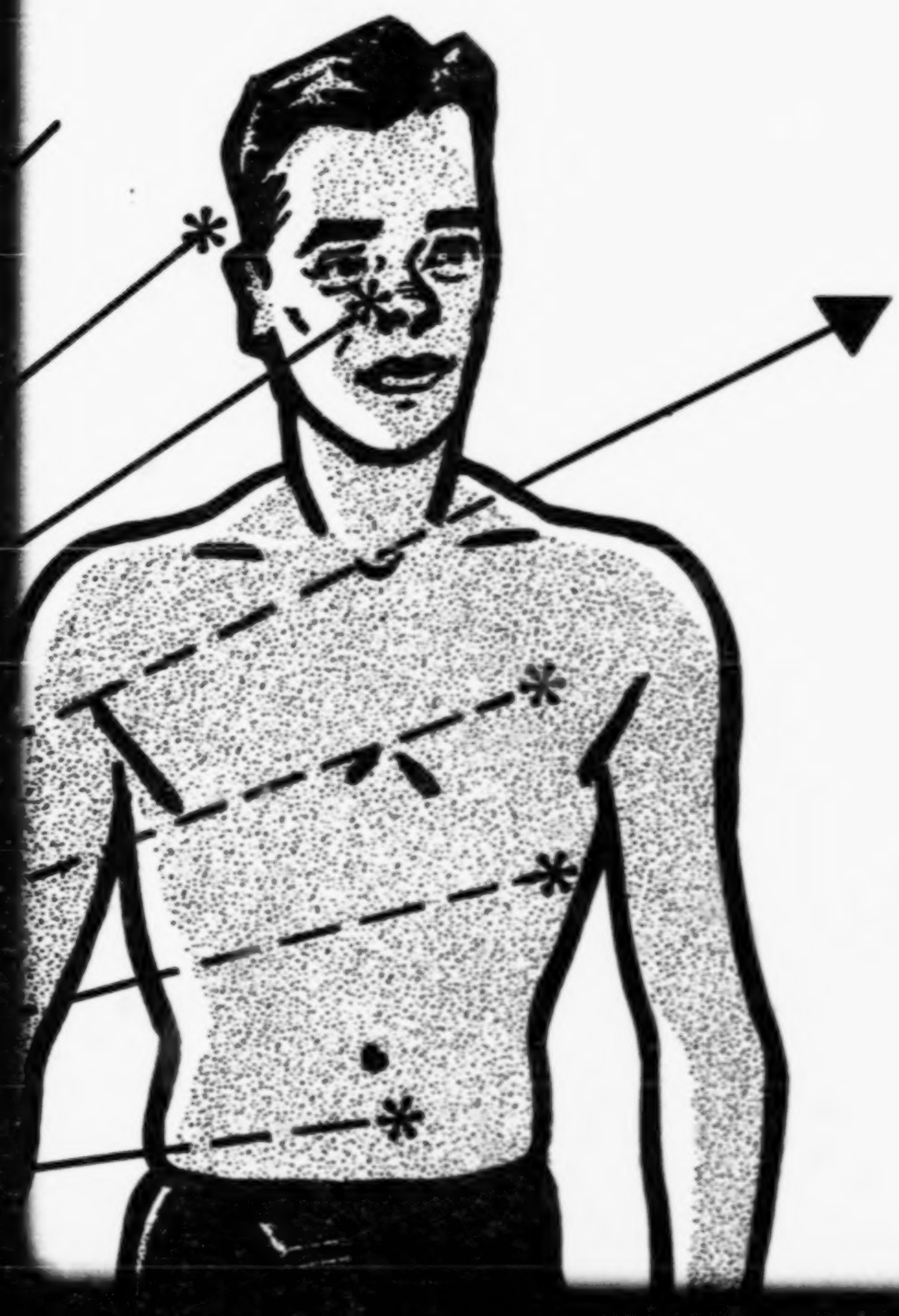

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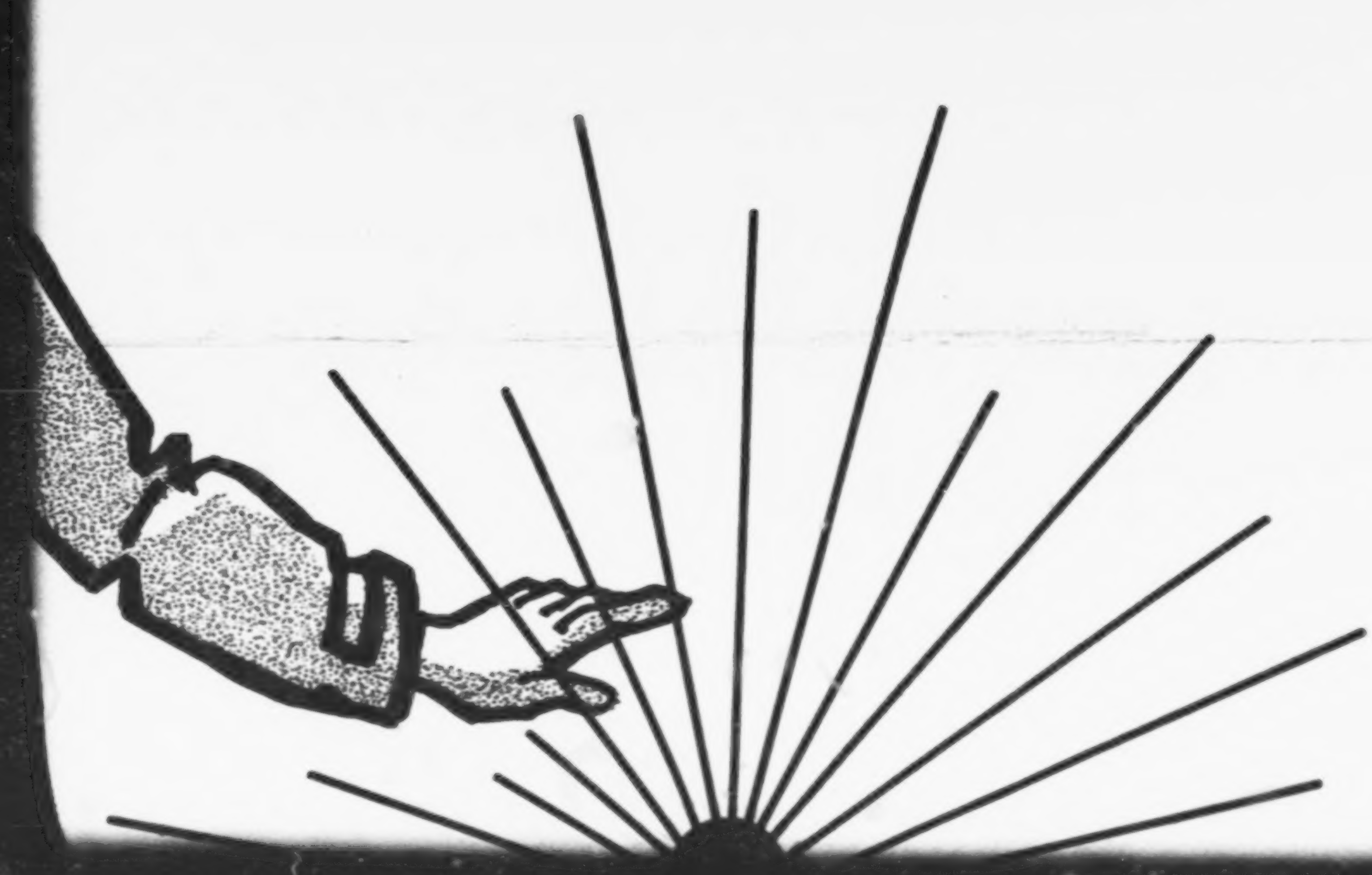

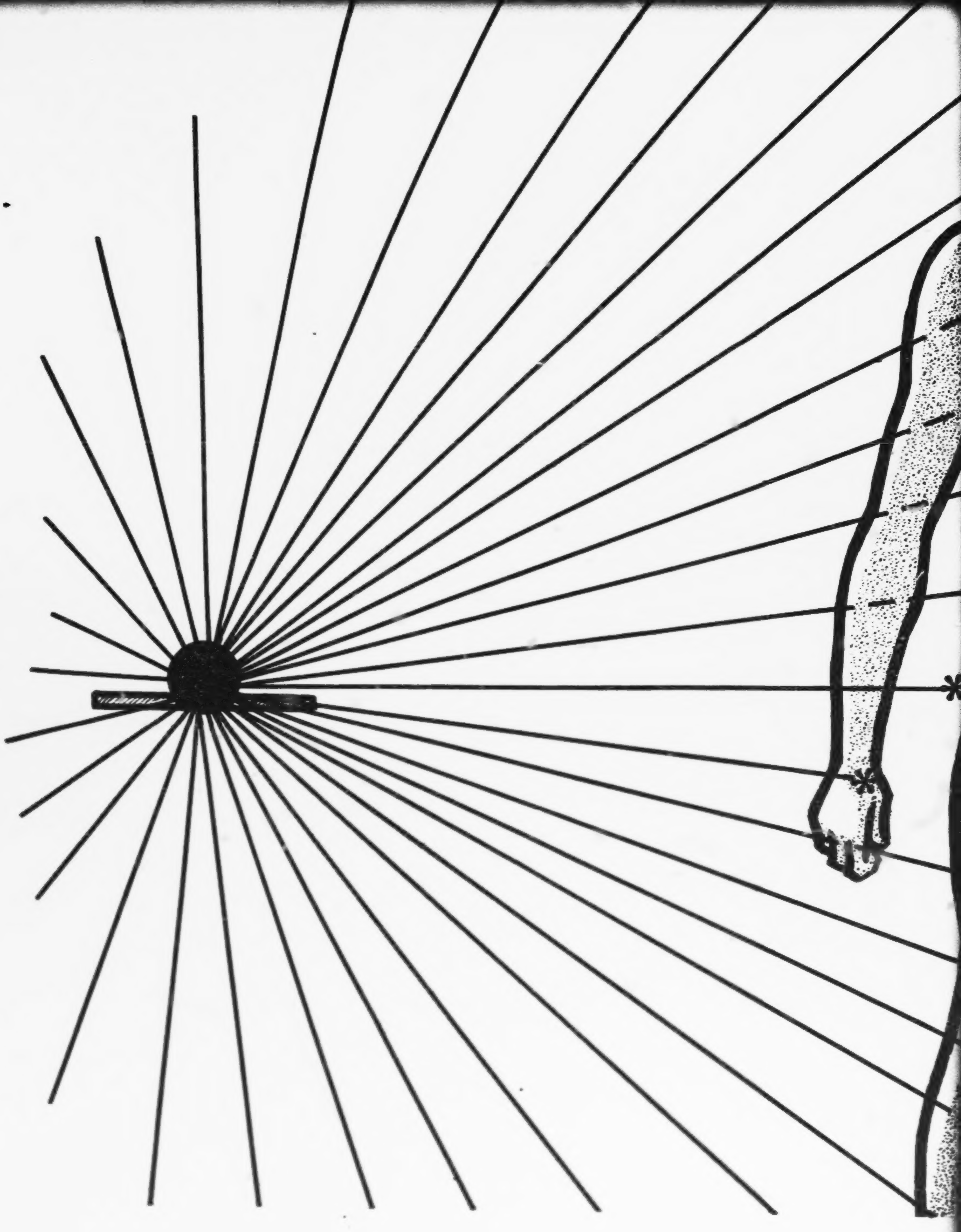

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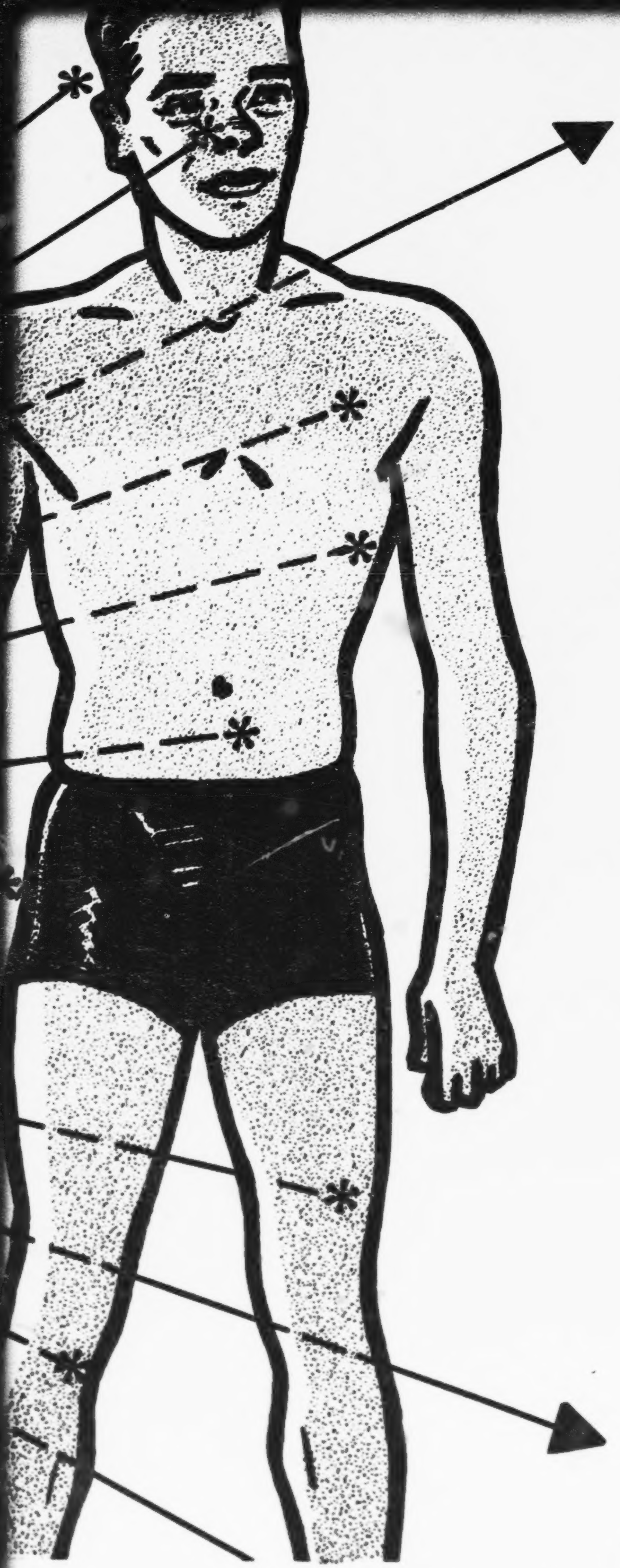

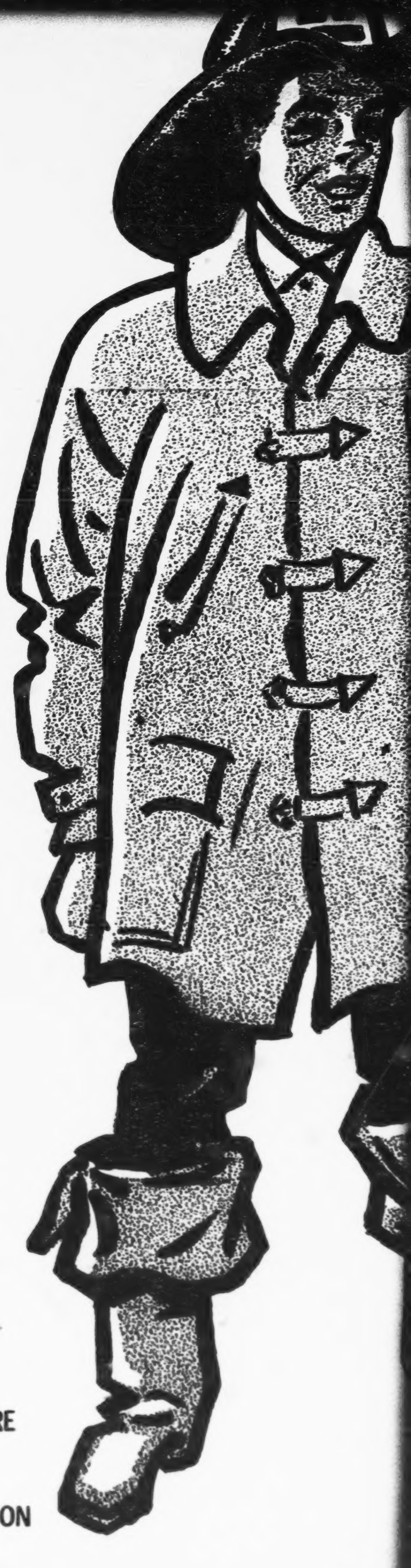

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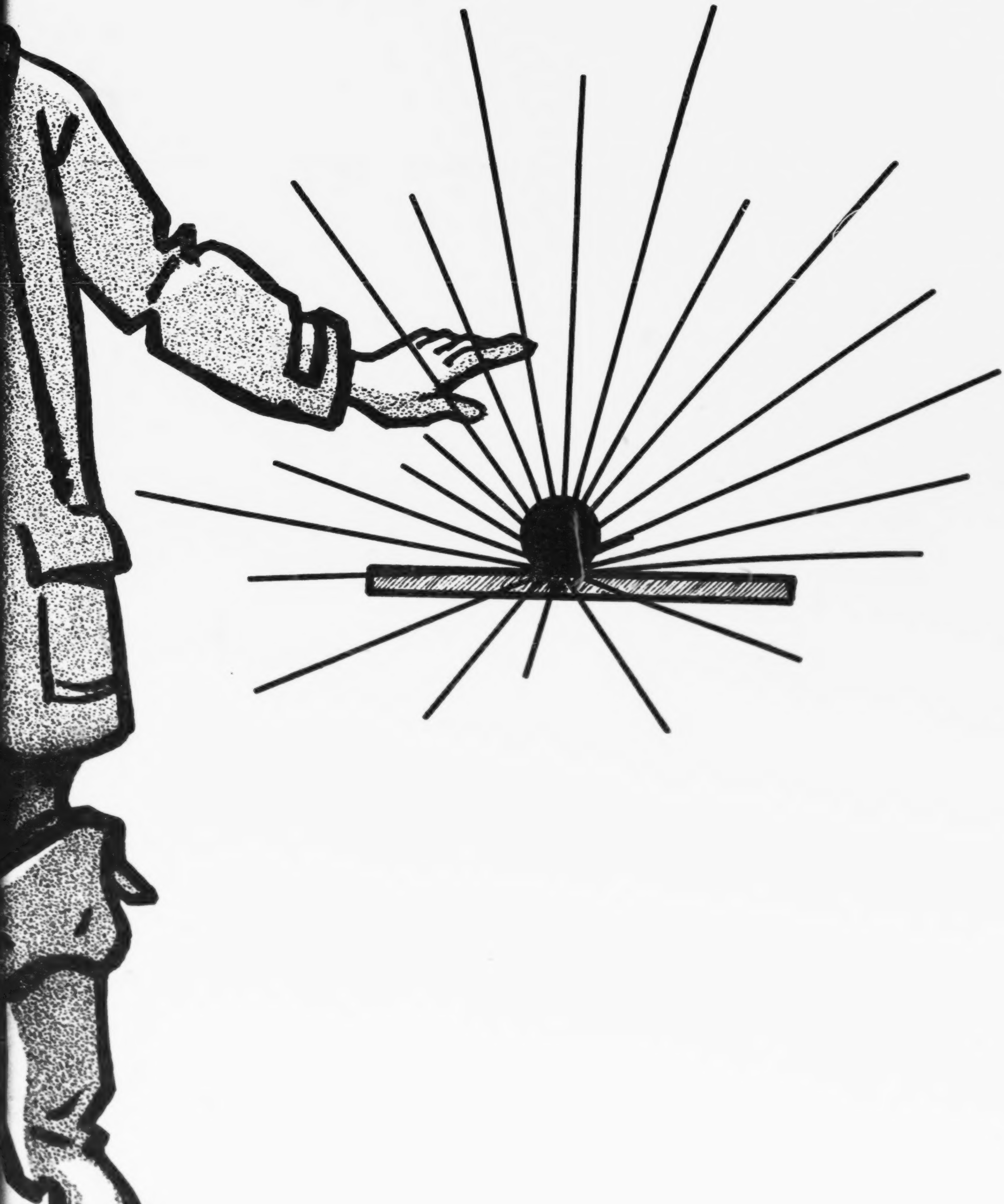

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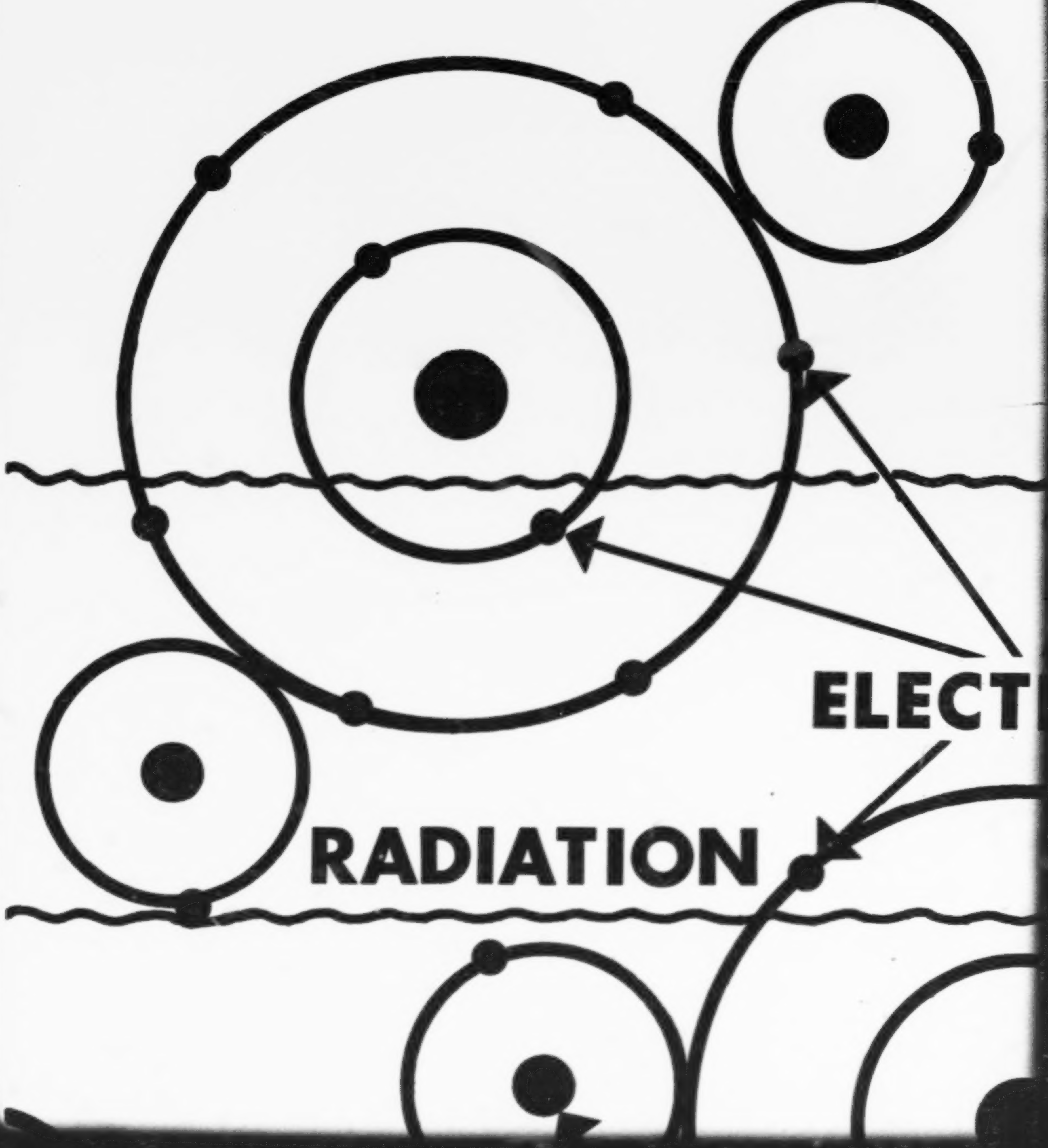
RADIATION EFFECT



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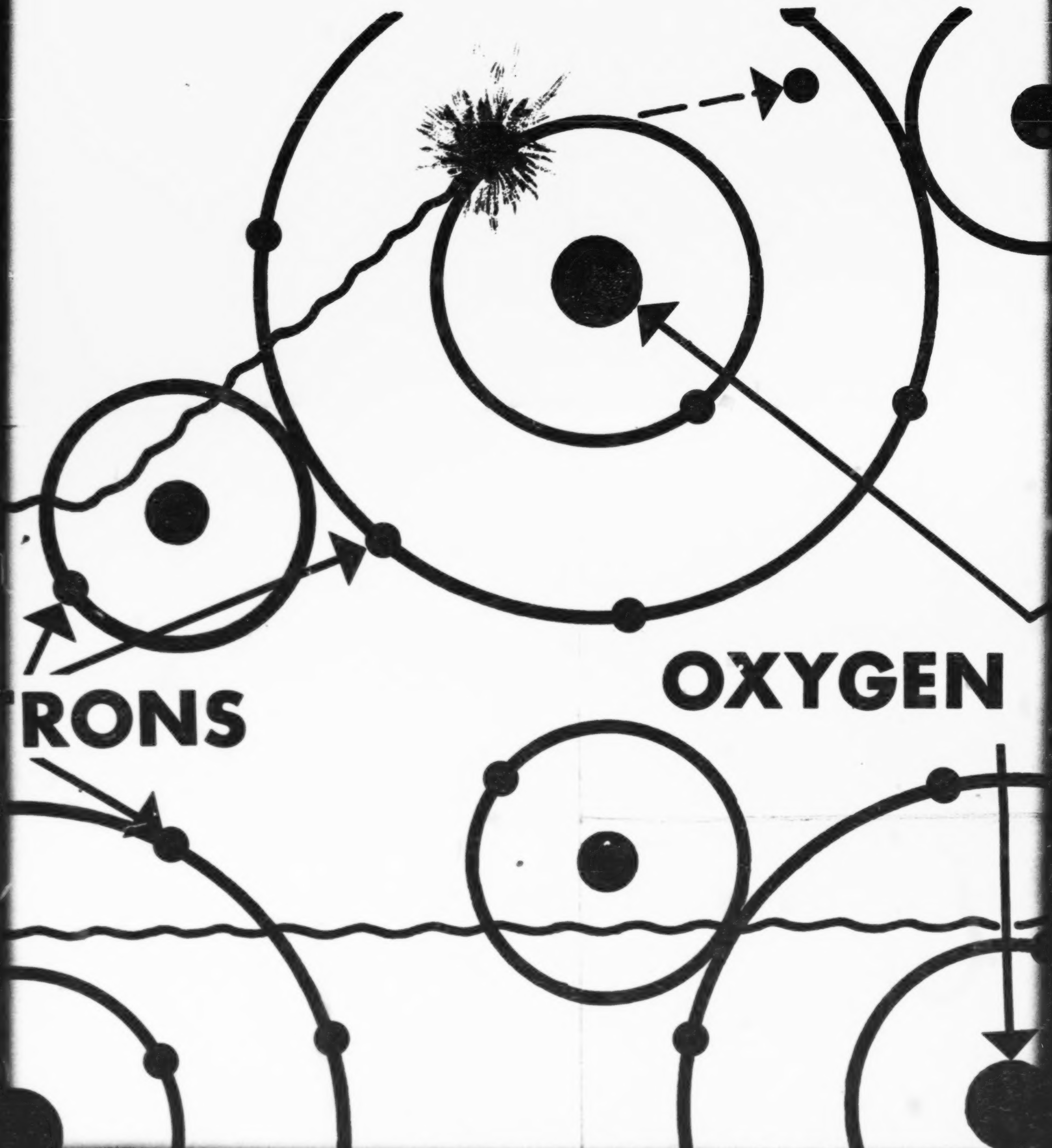

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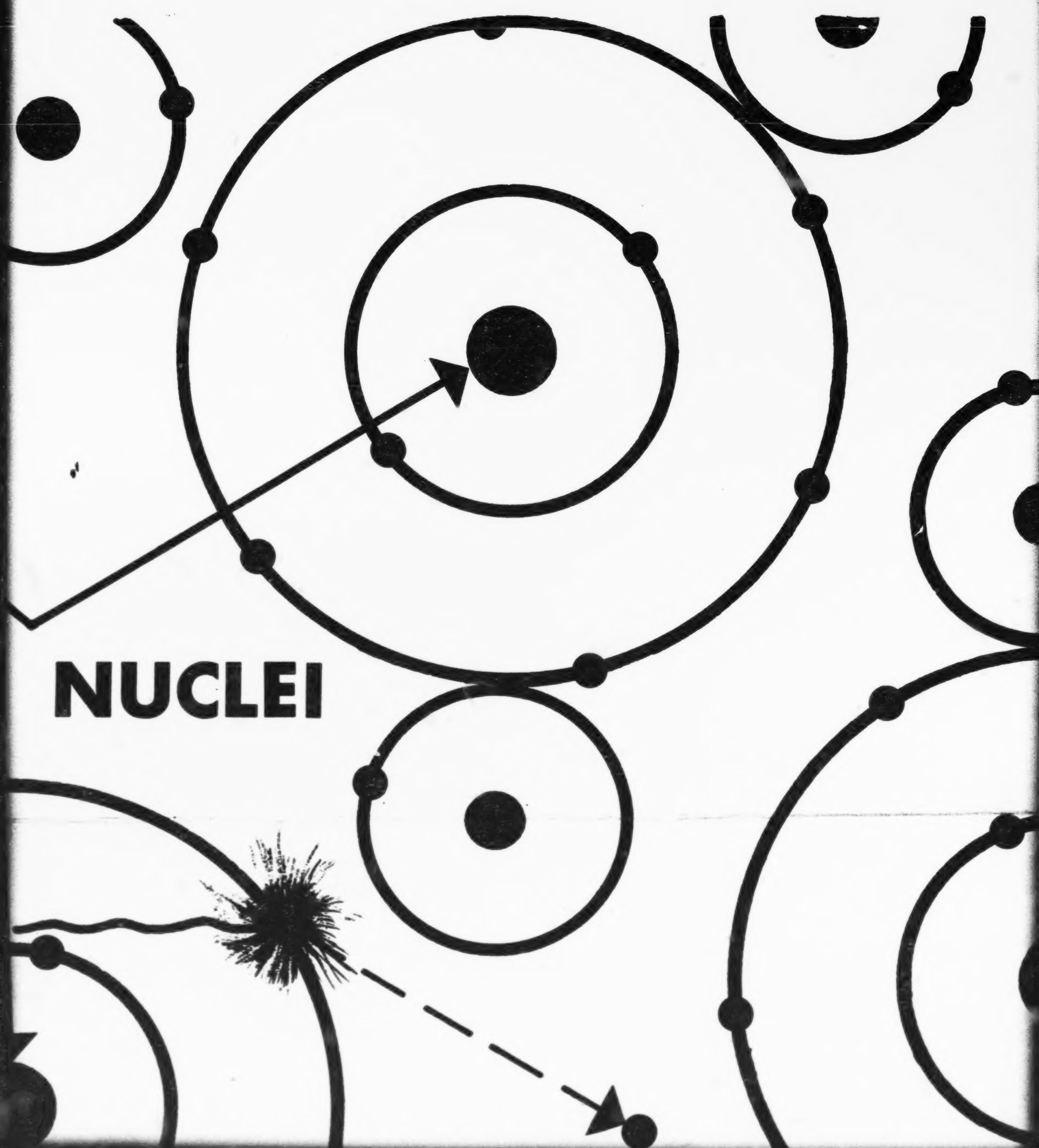

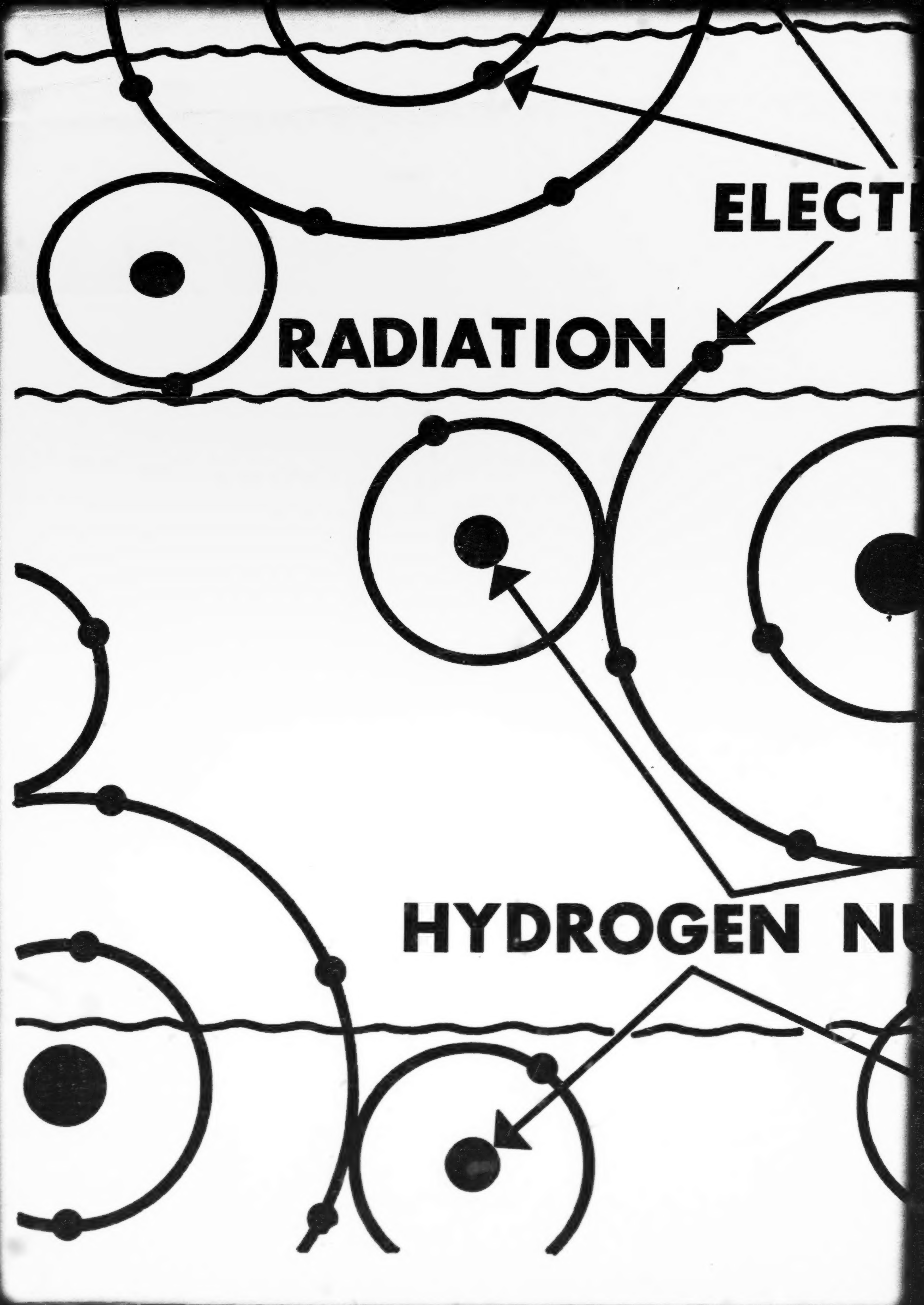
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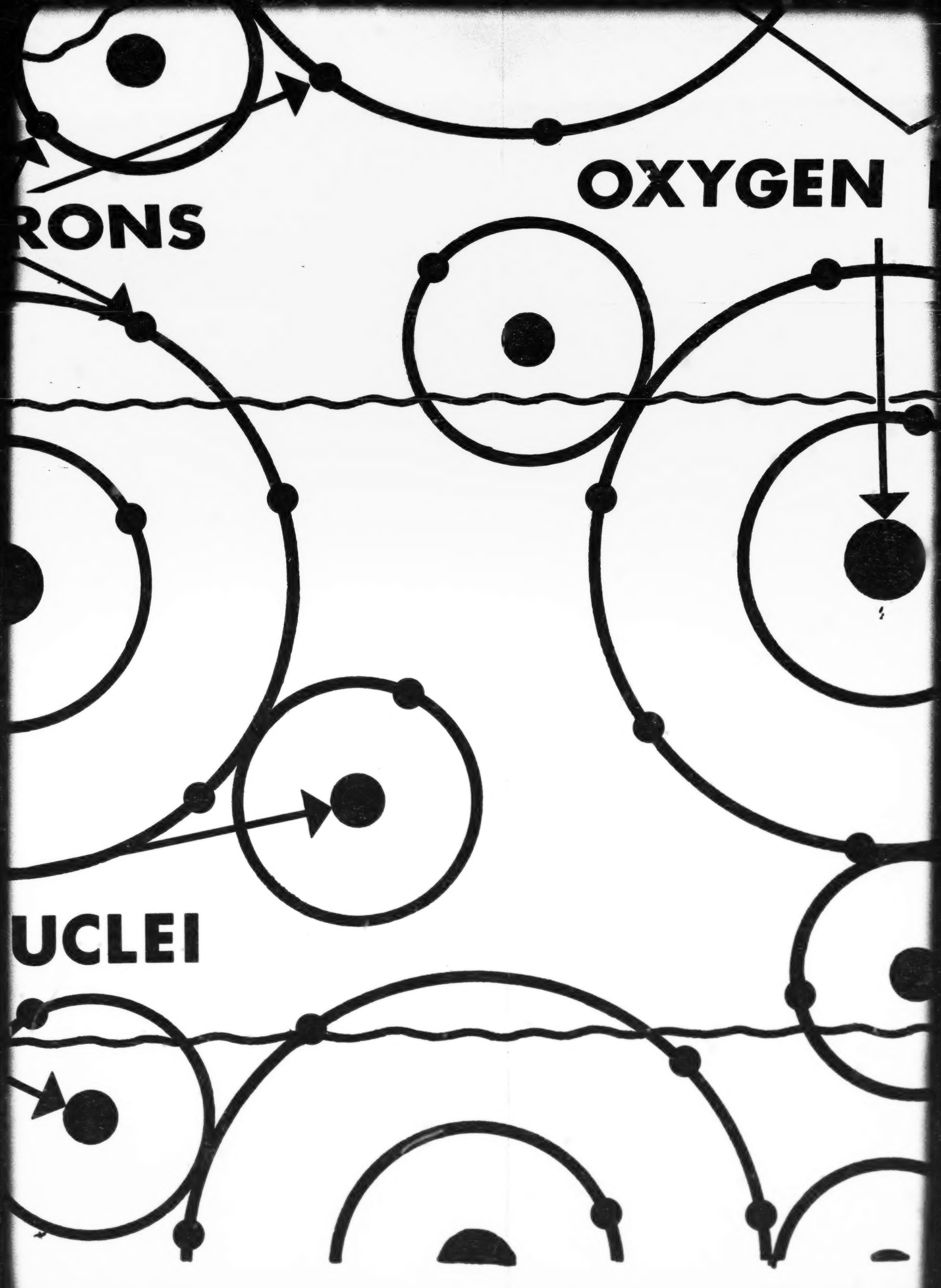
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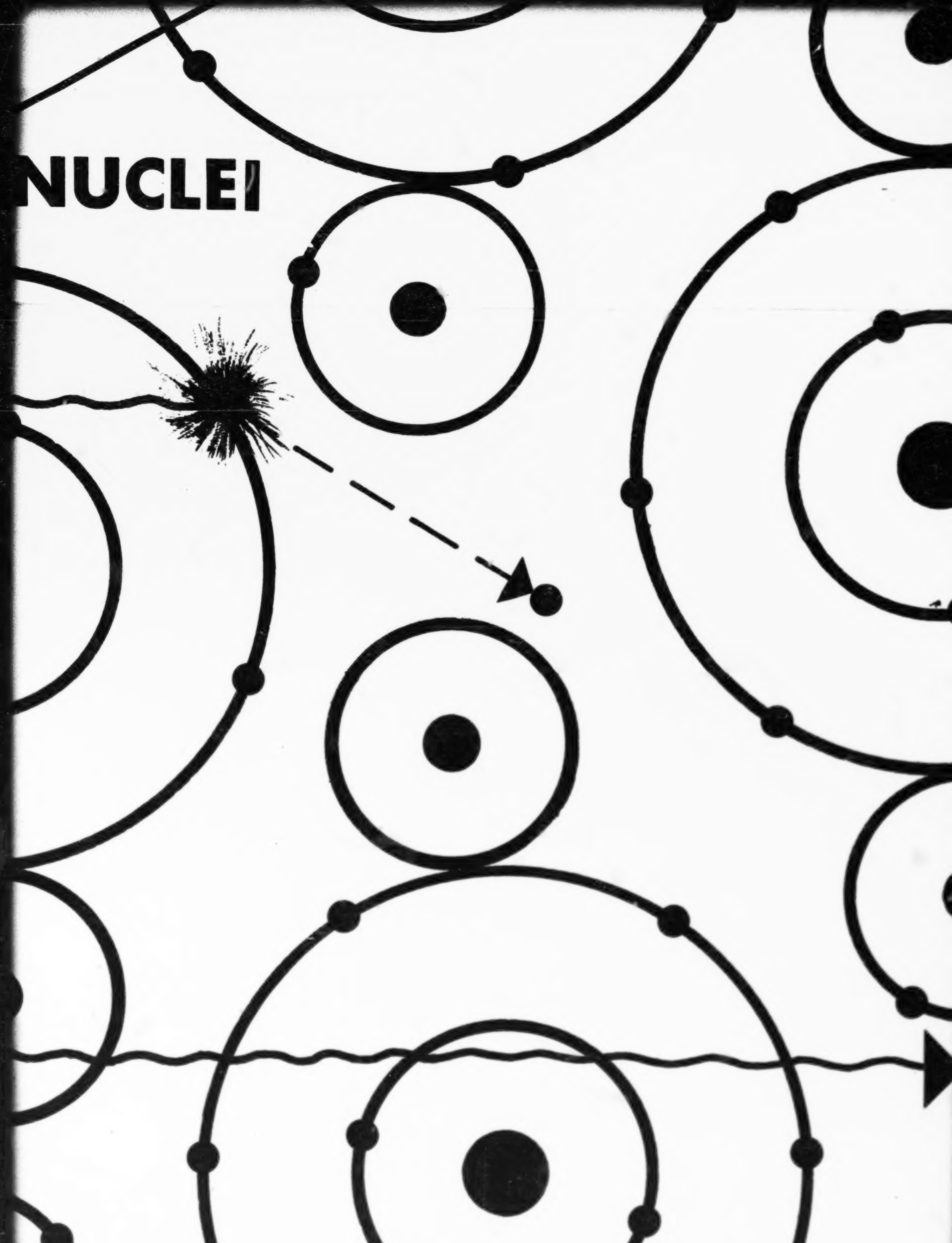

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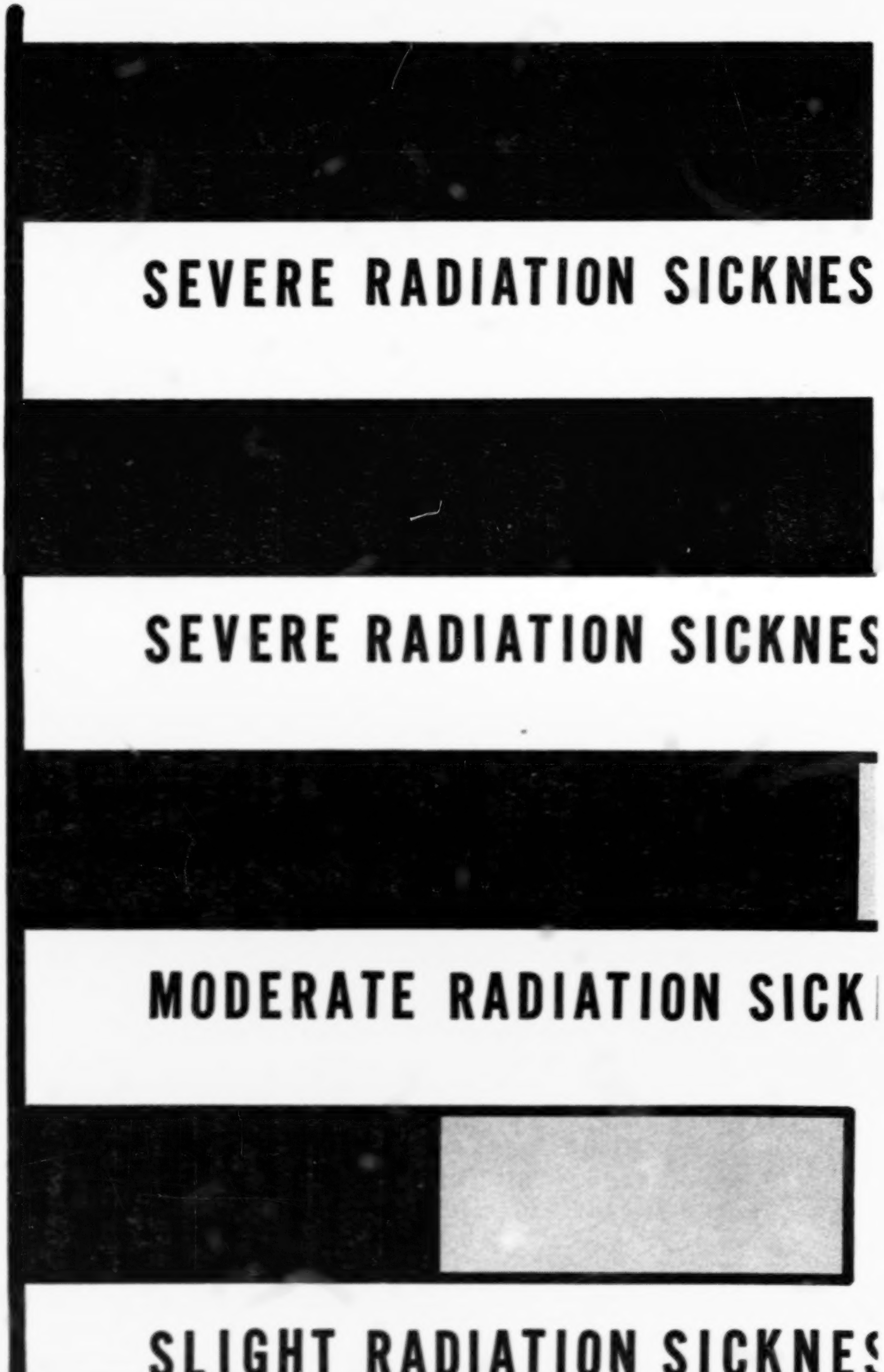
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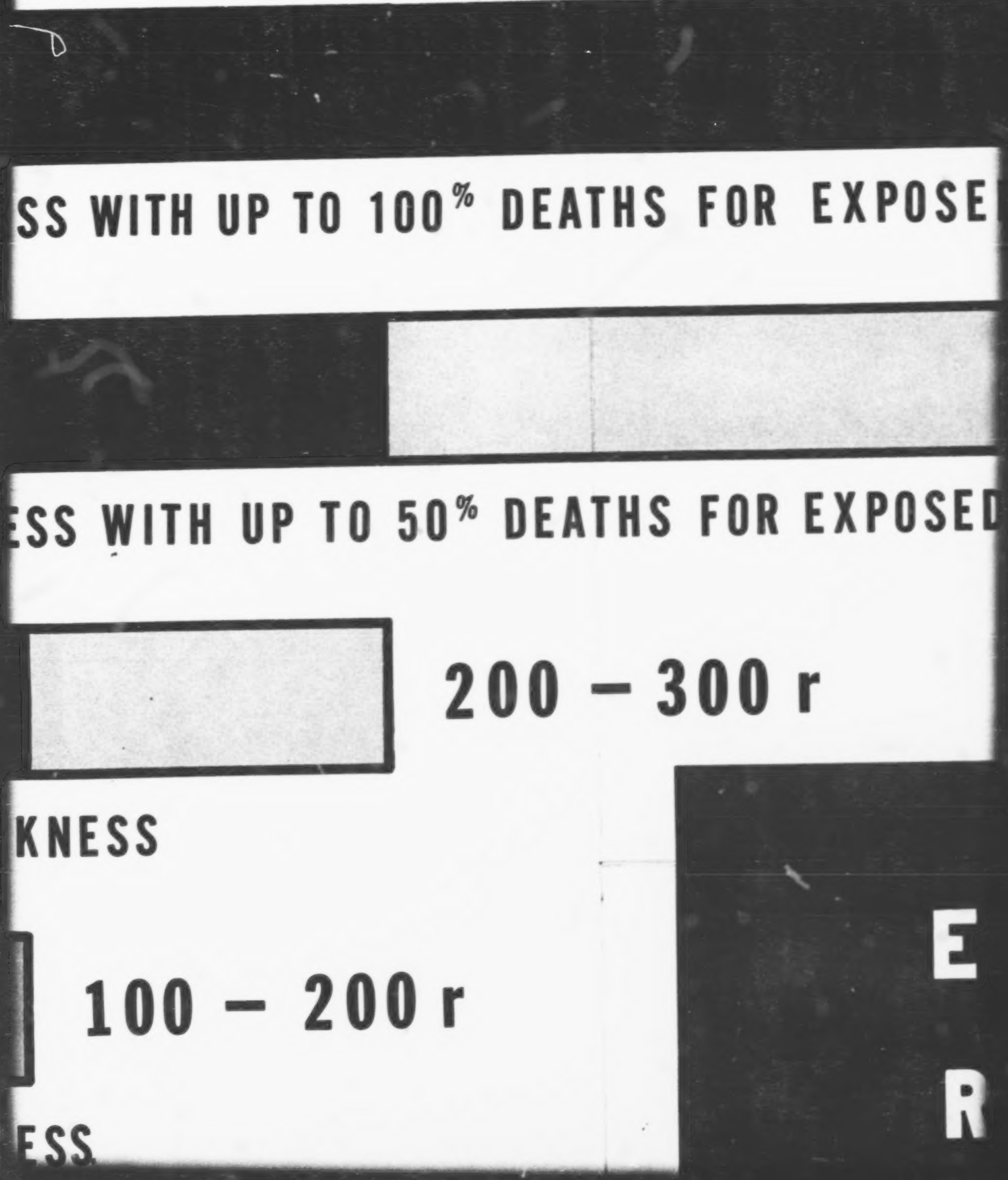

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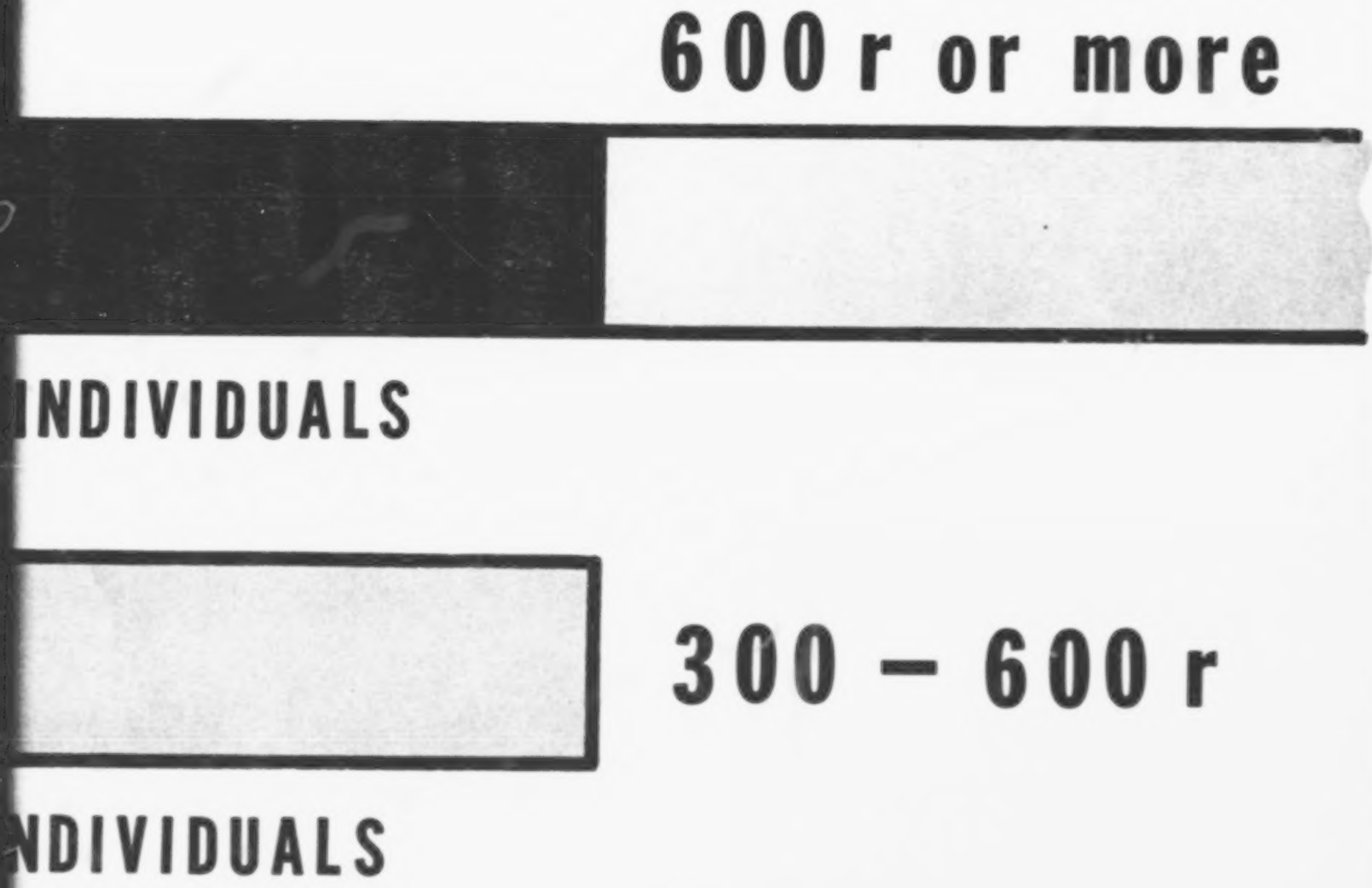

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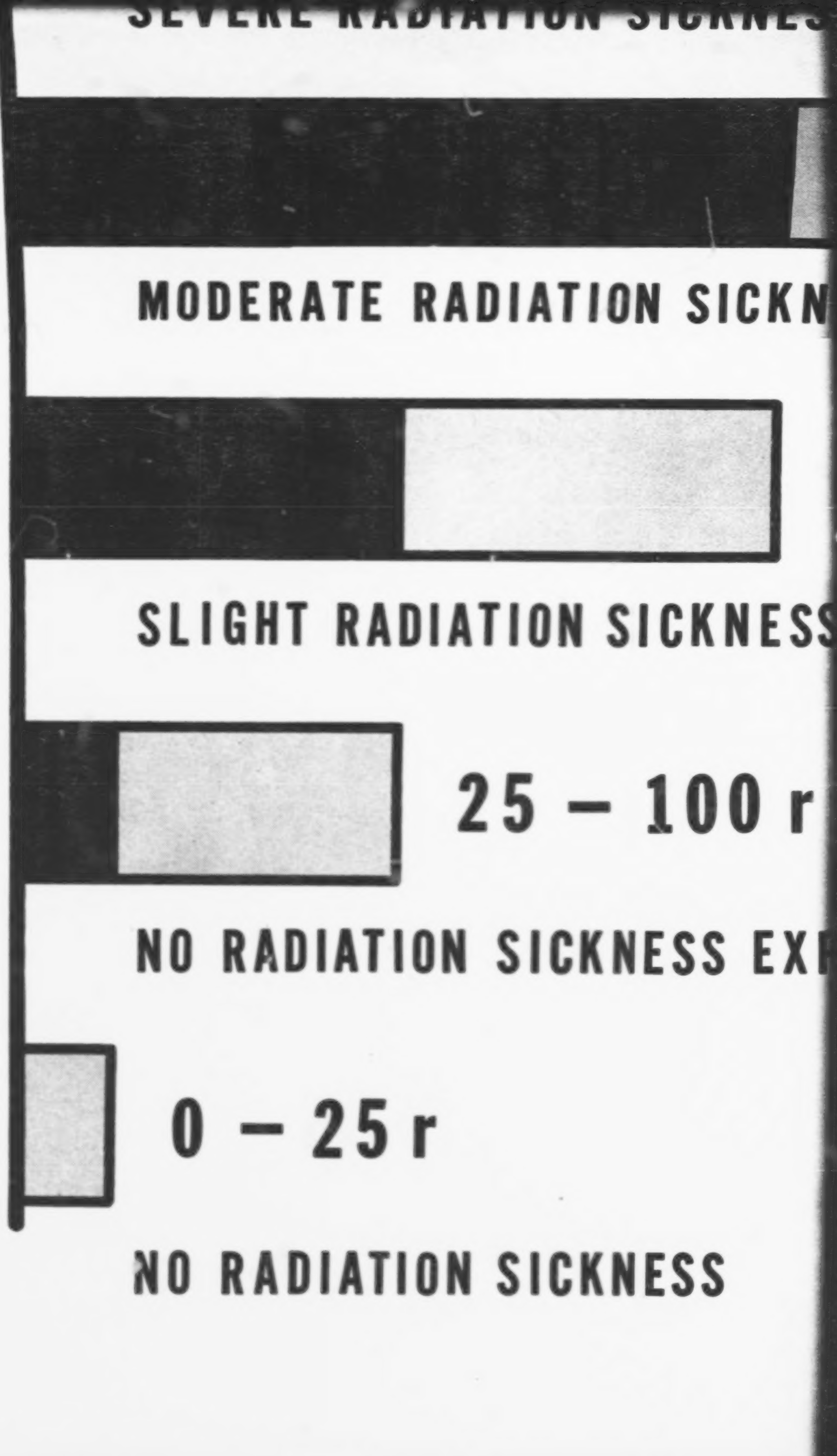
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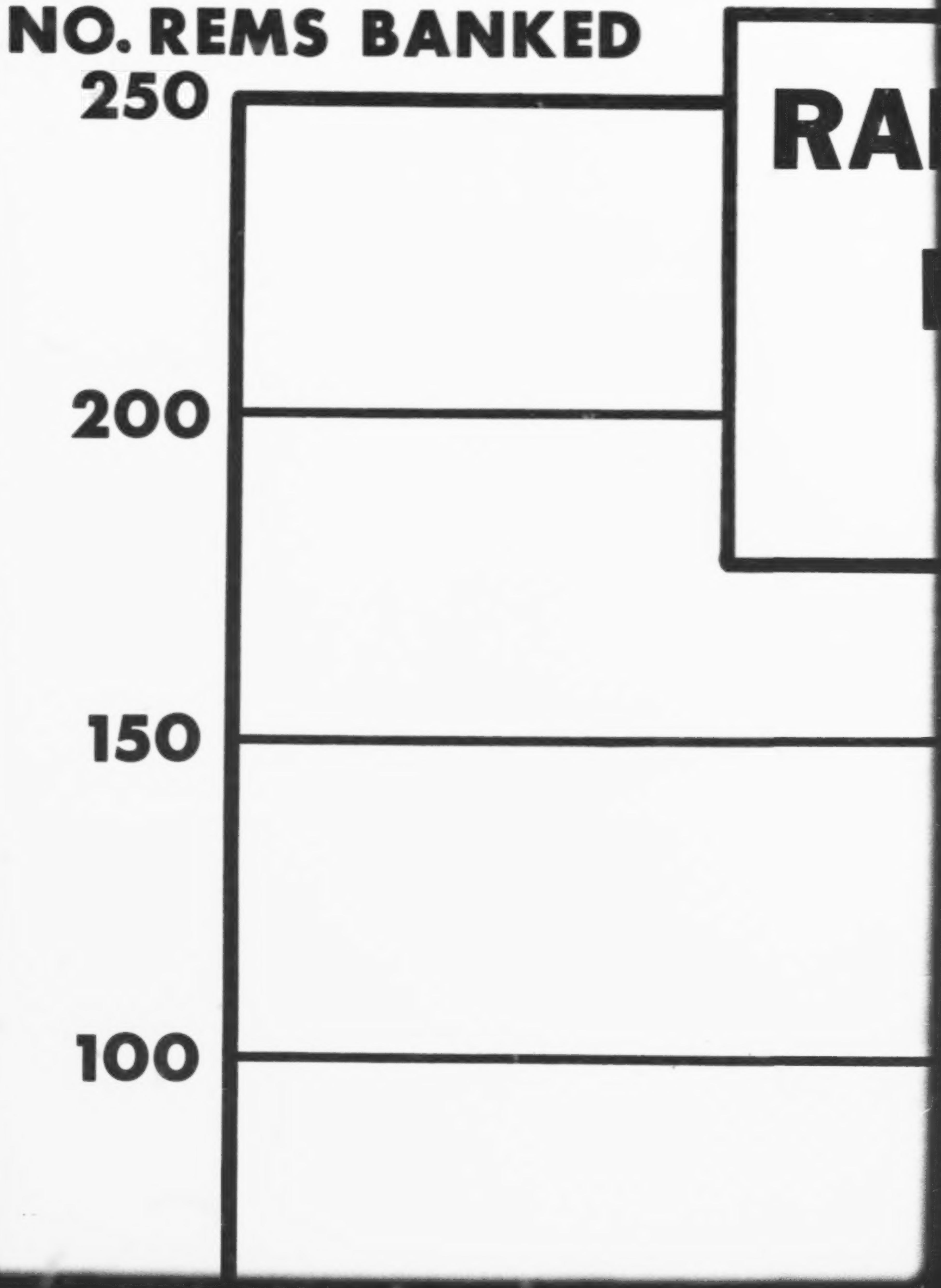
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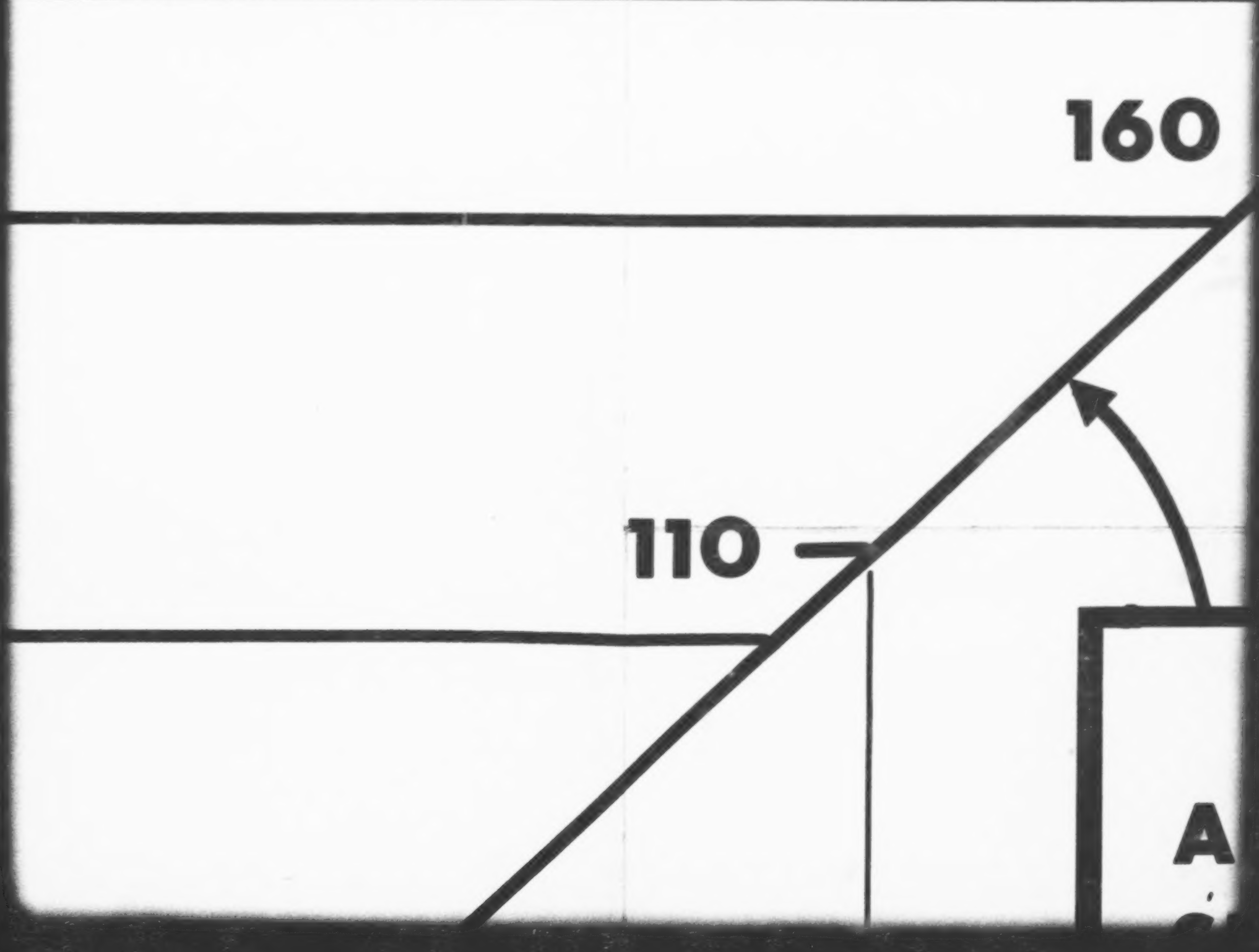

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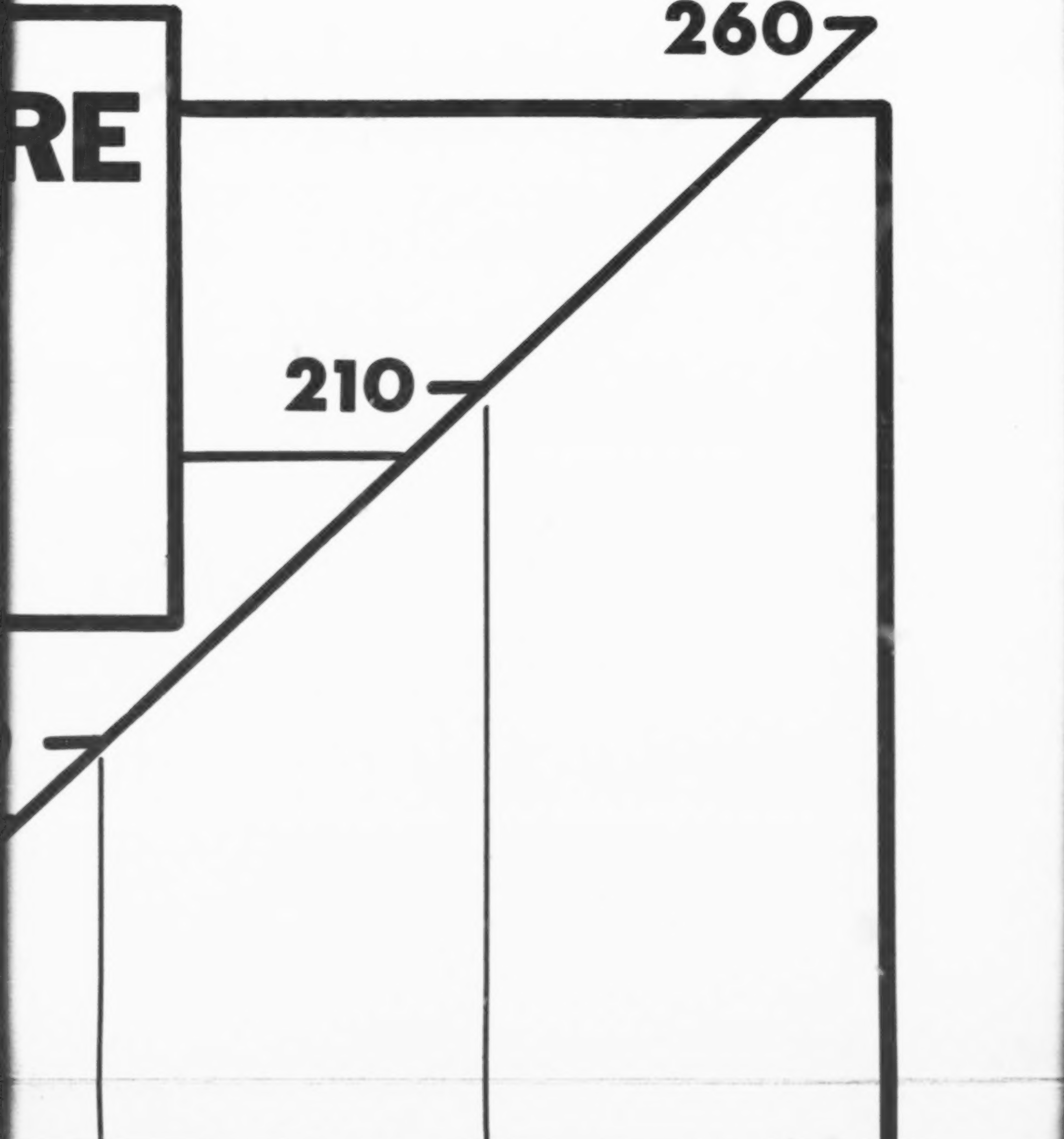

RADIATION WORKERS
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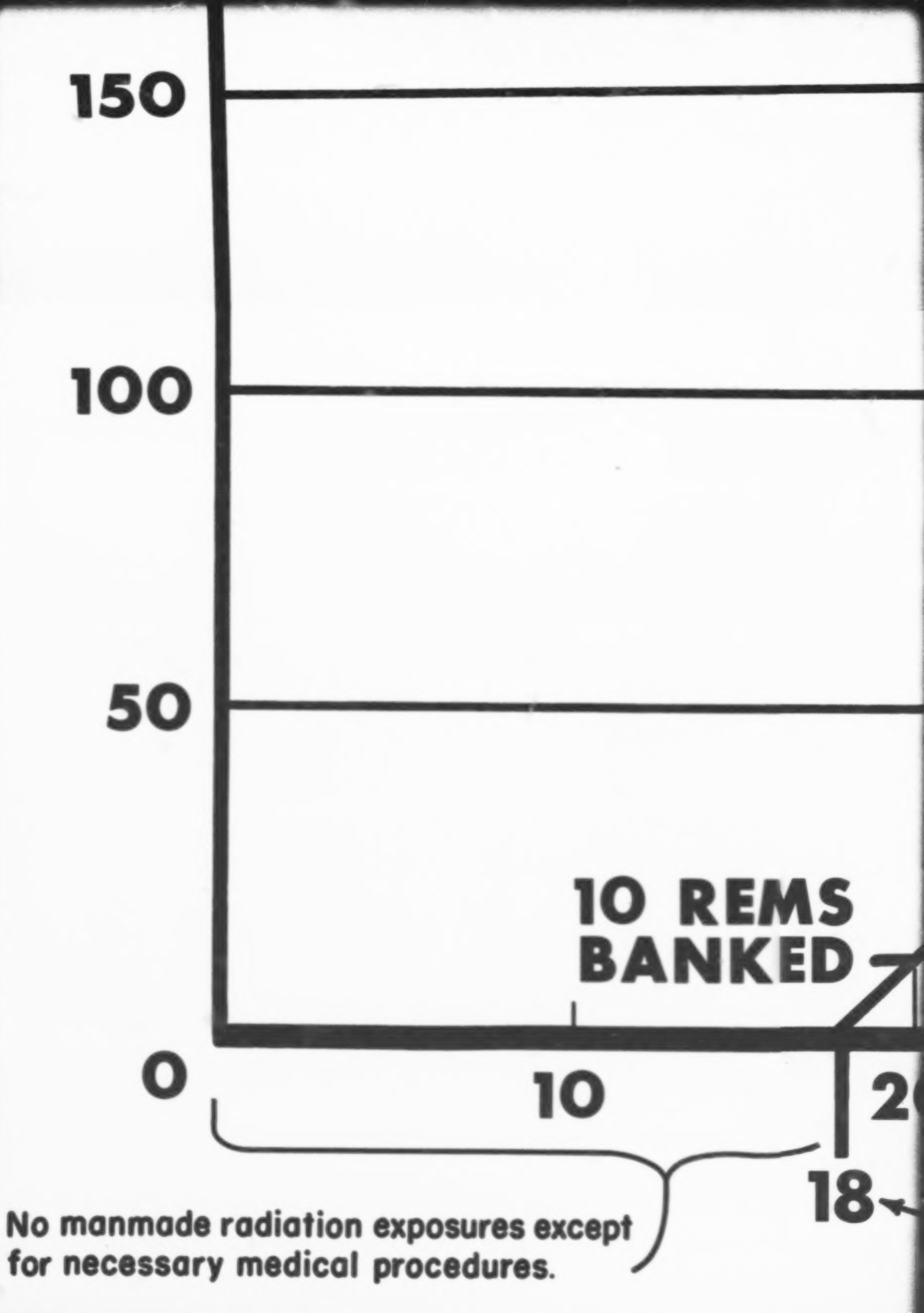
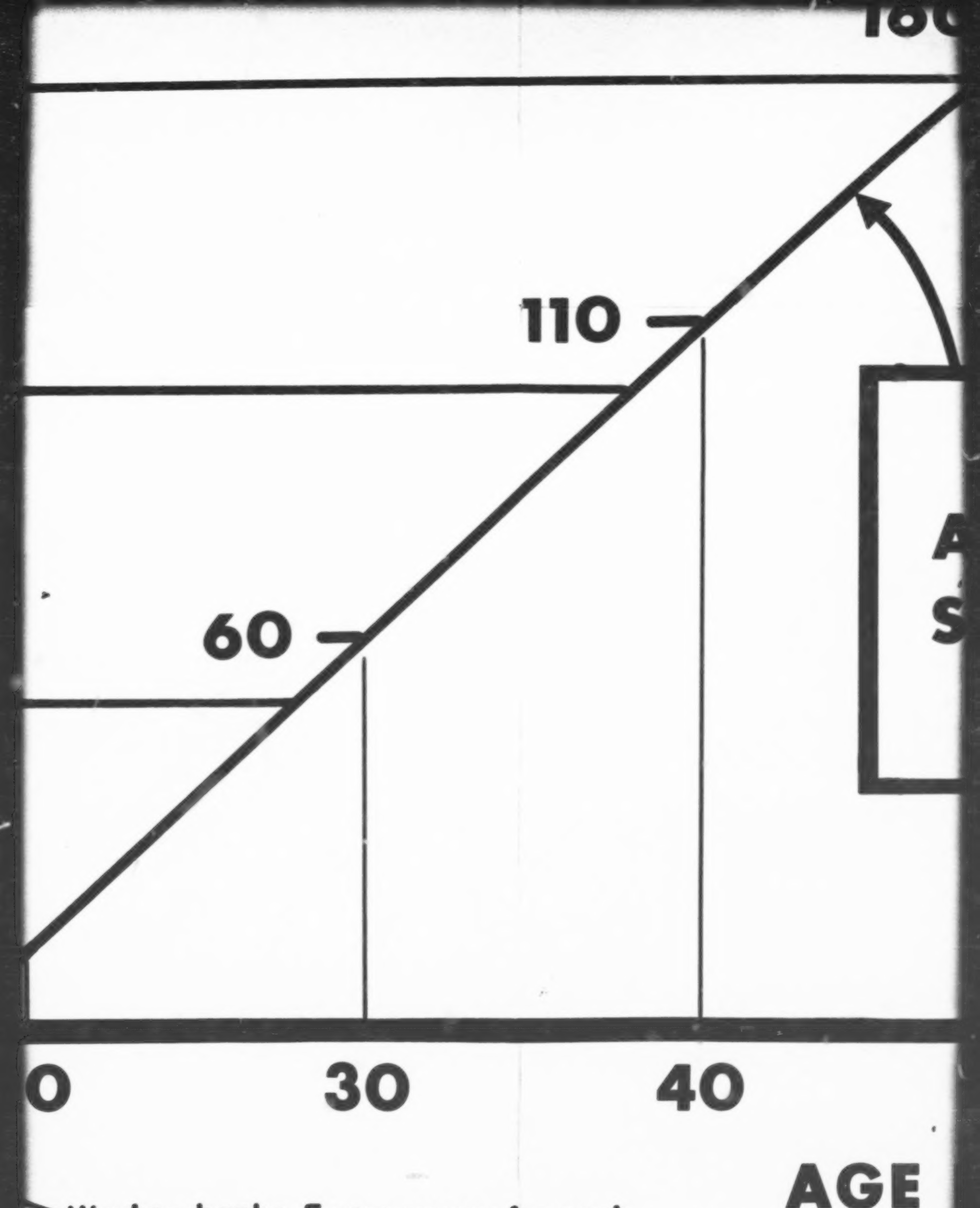


10 REMS BANKED

No manmade radiation exposures except for necessary medical procedures.



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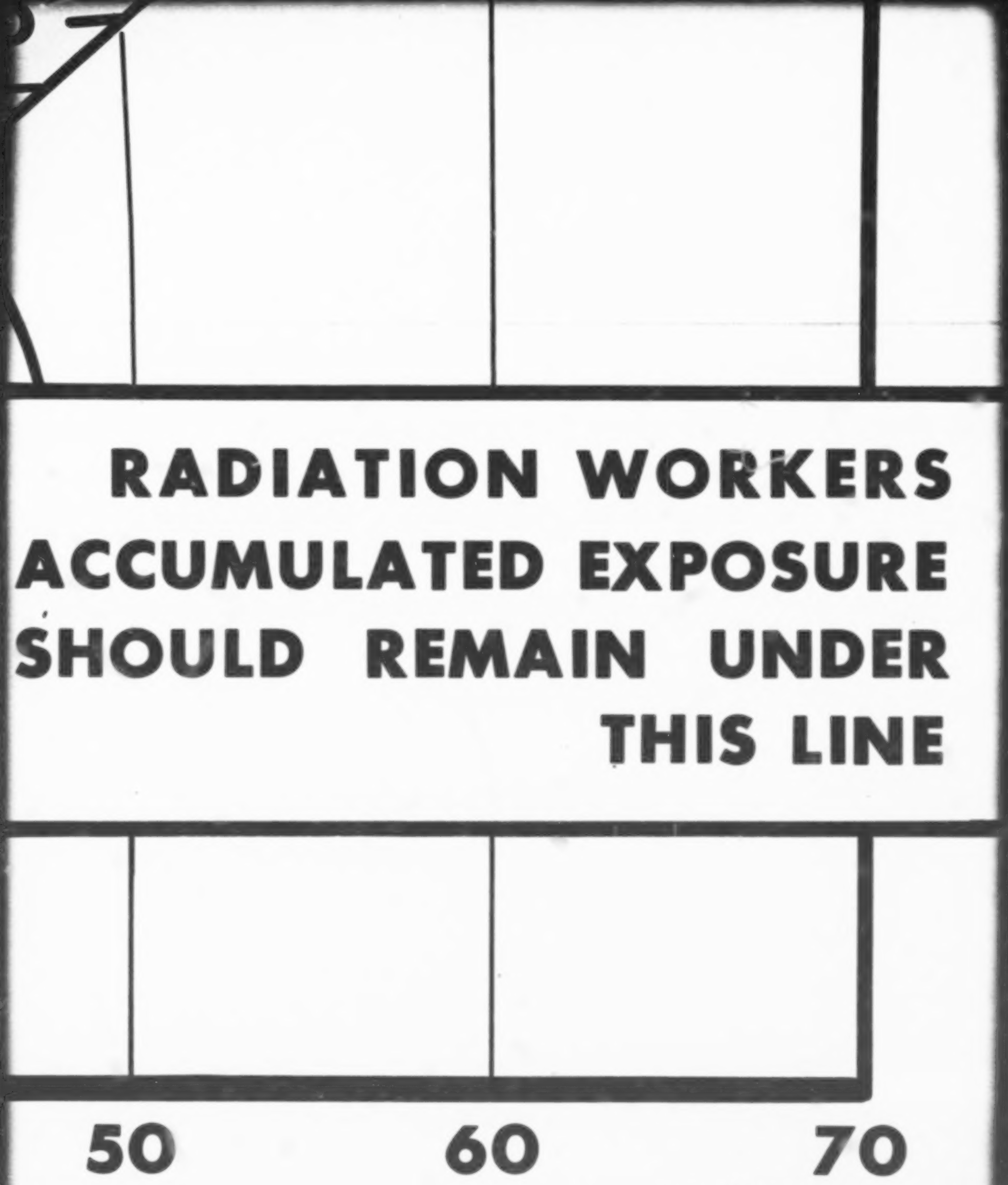

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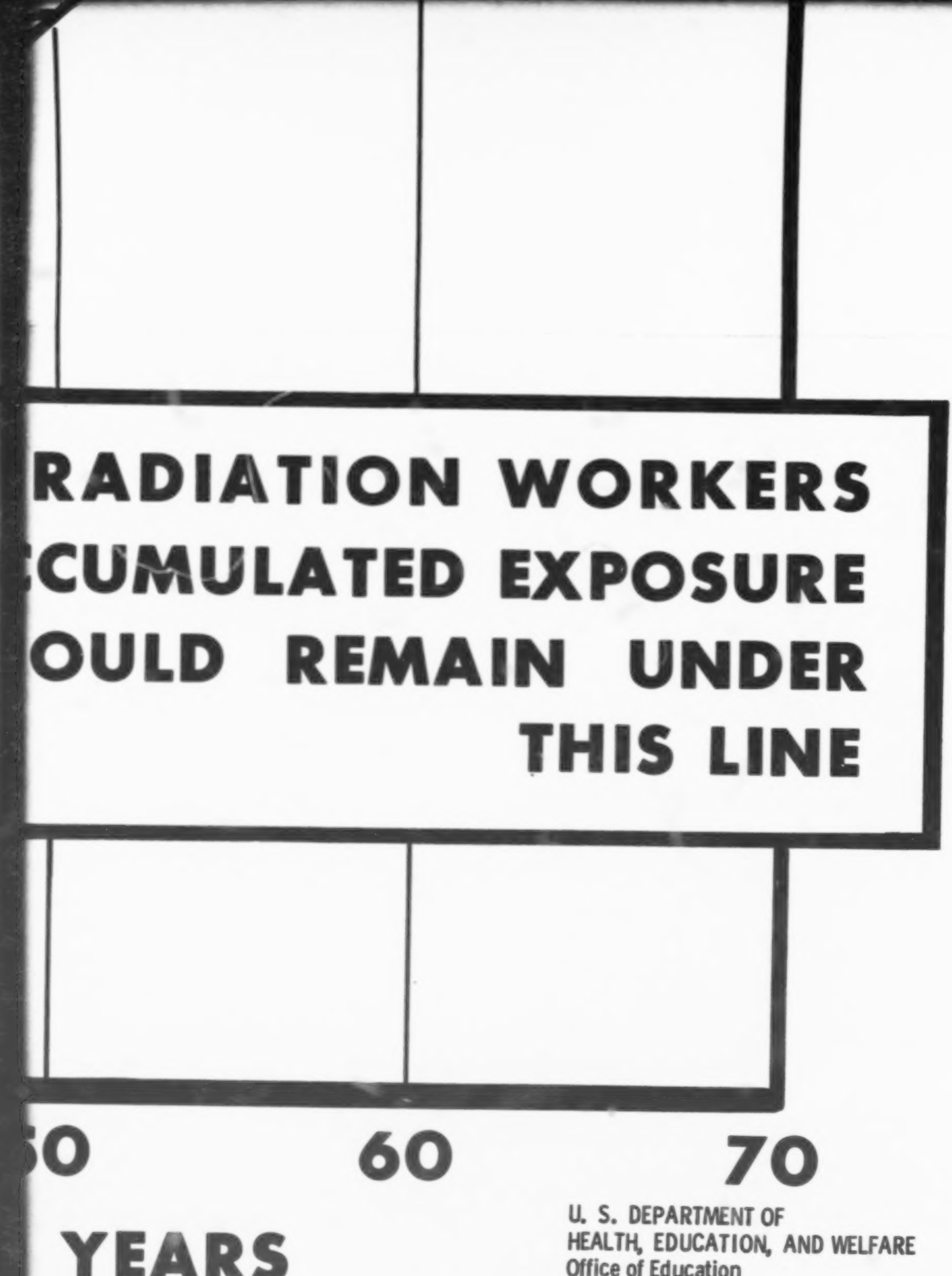

RADIATION WORKERS
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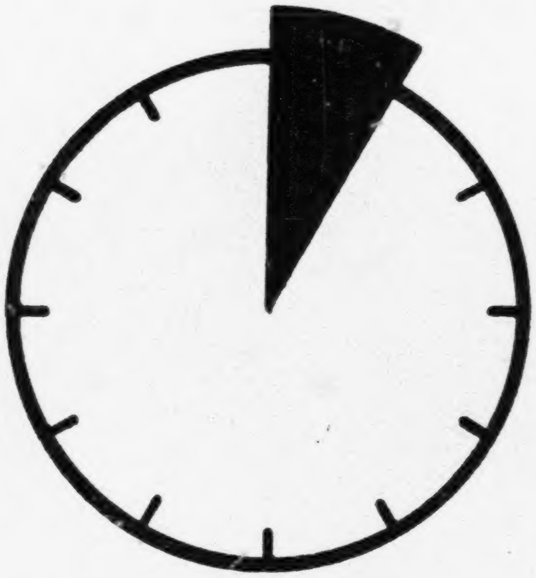

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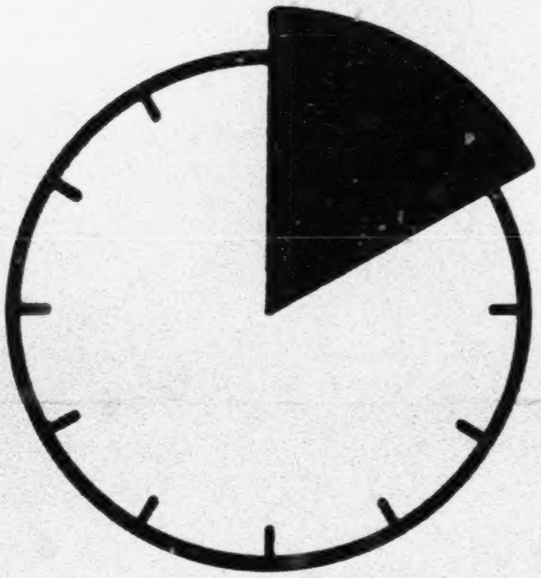

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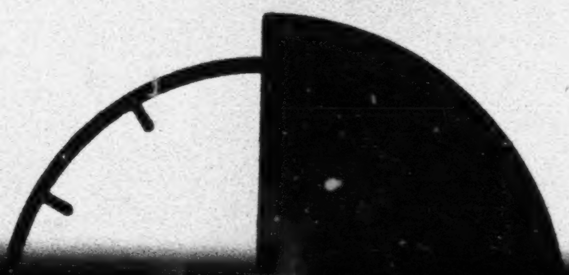

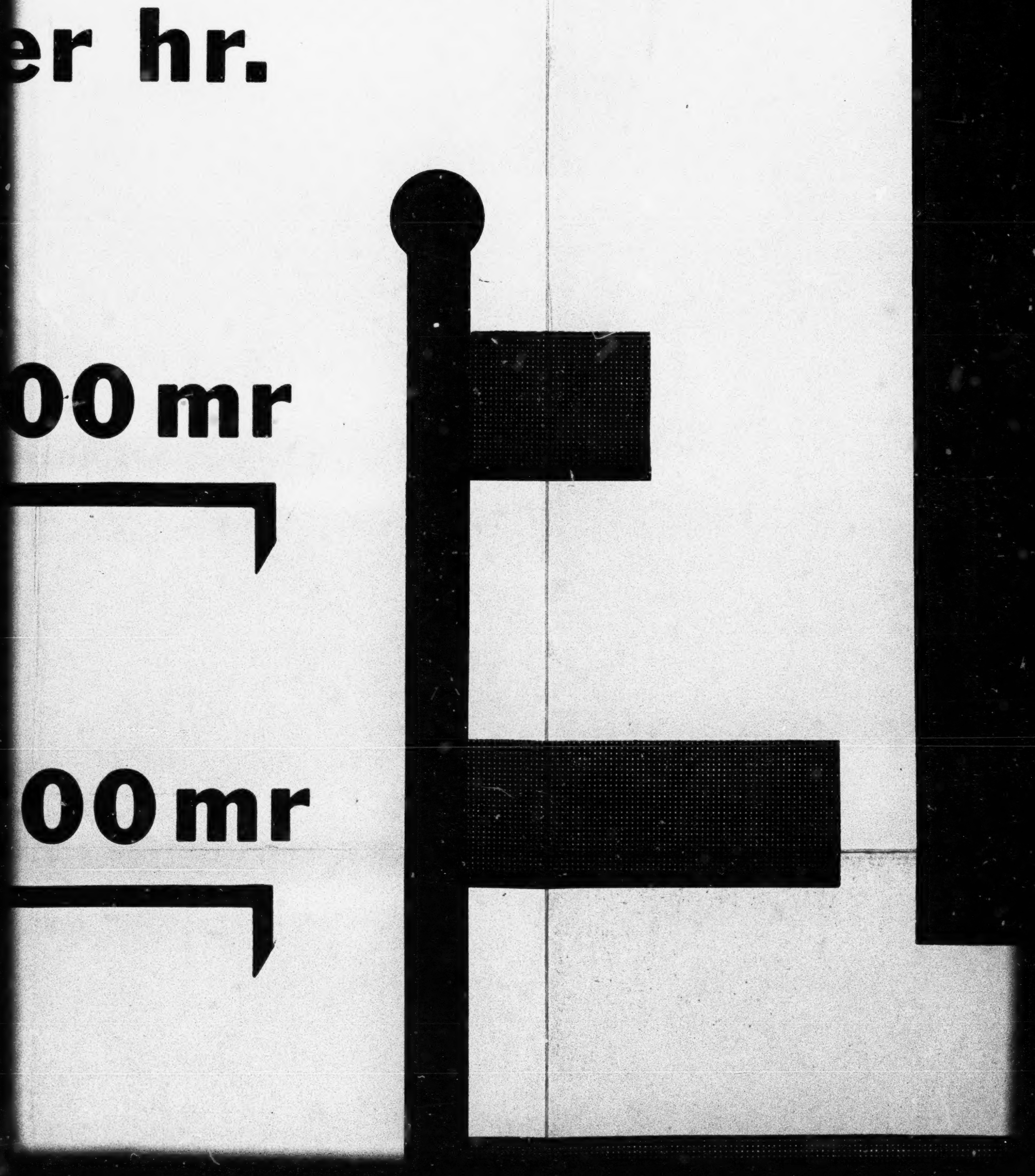
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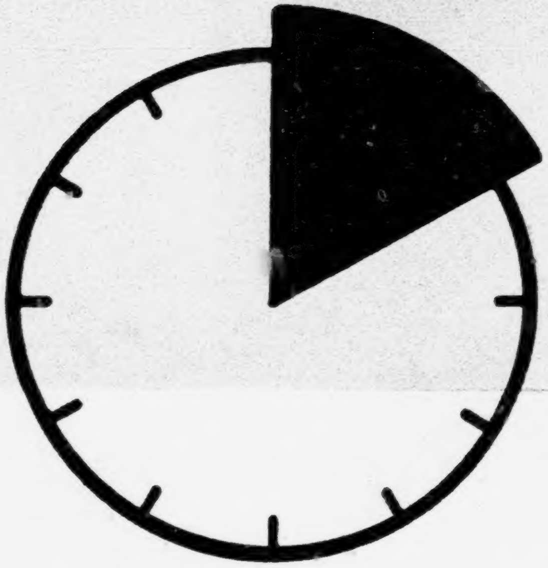

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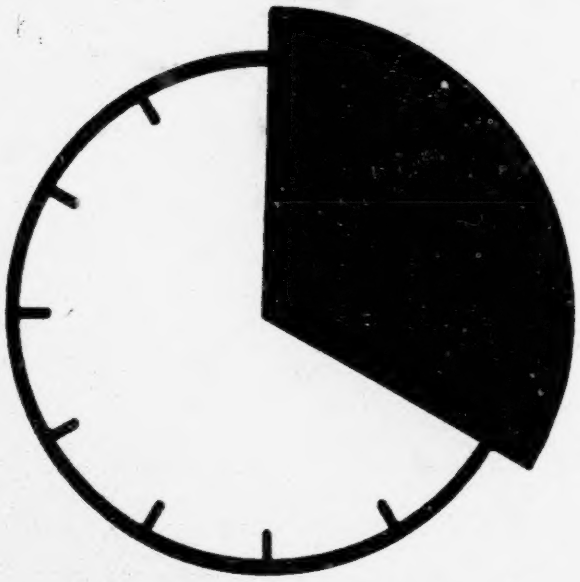

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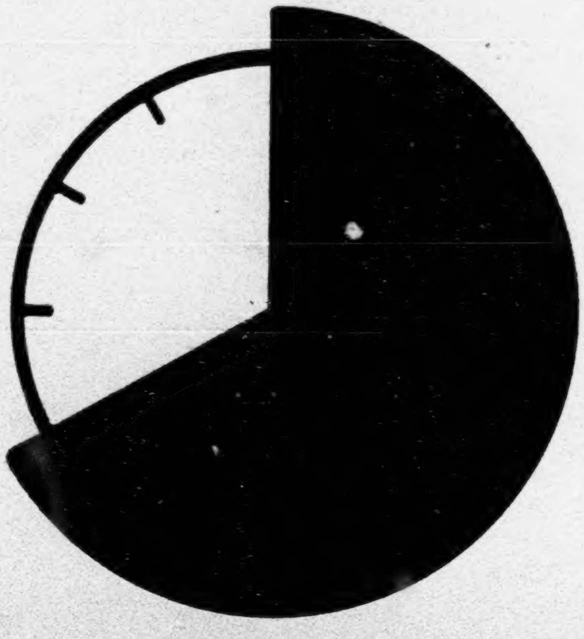

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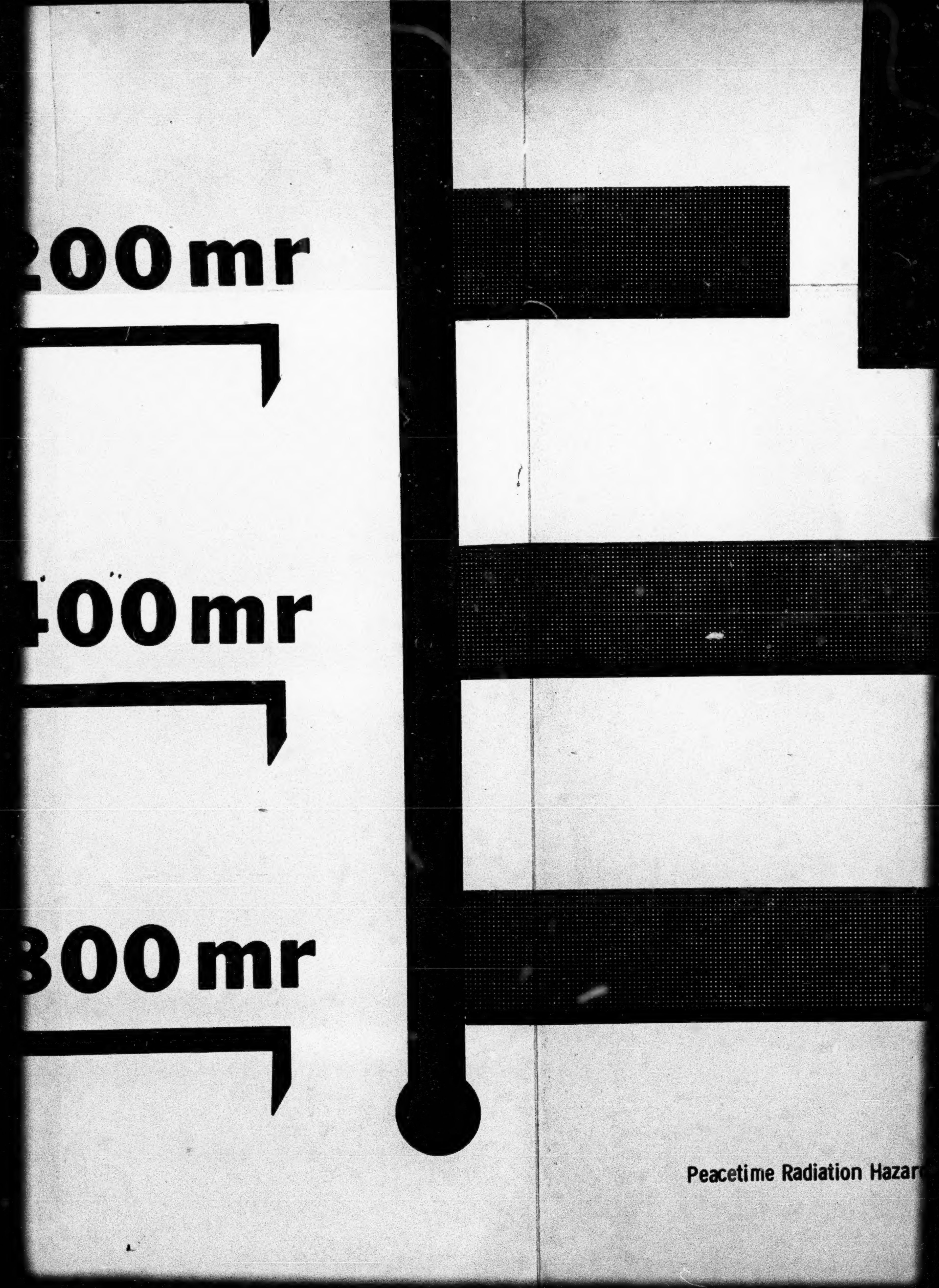

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EXTERNAL RADIATION

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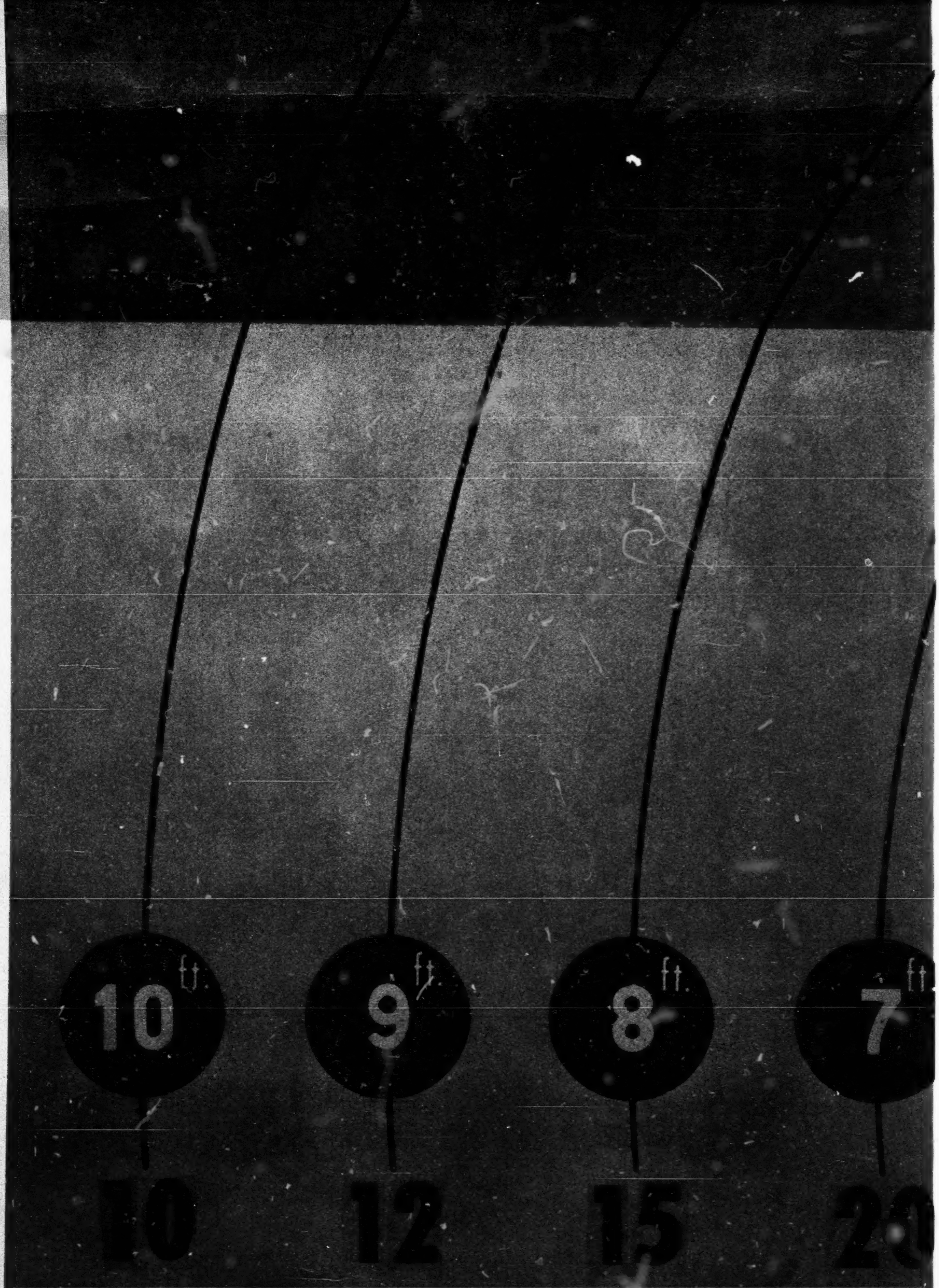
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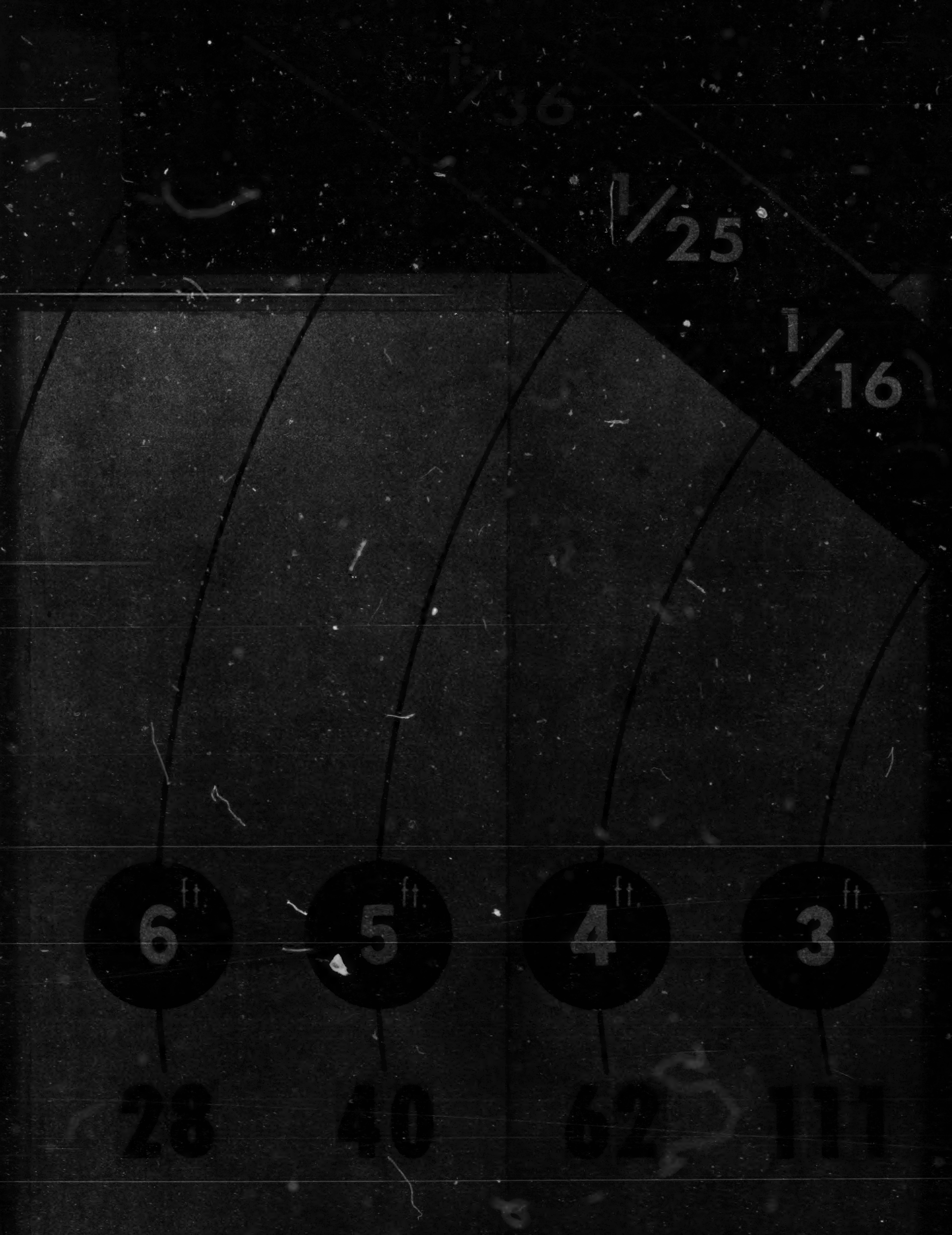
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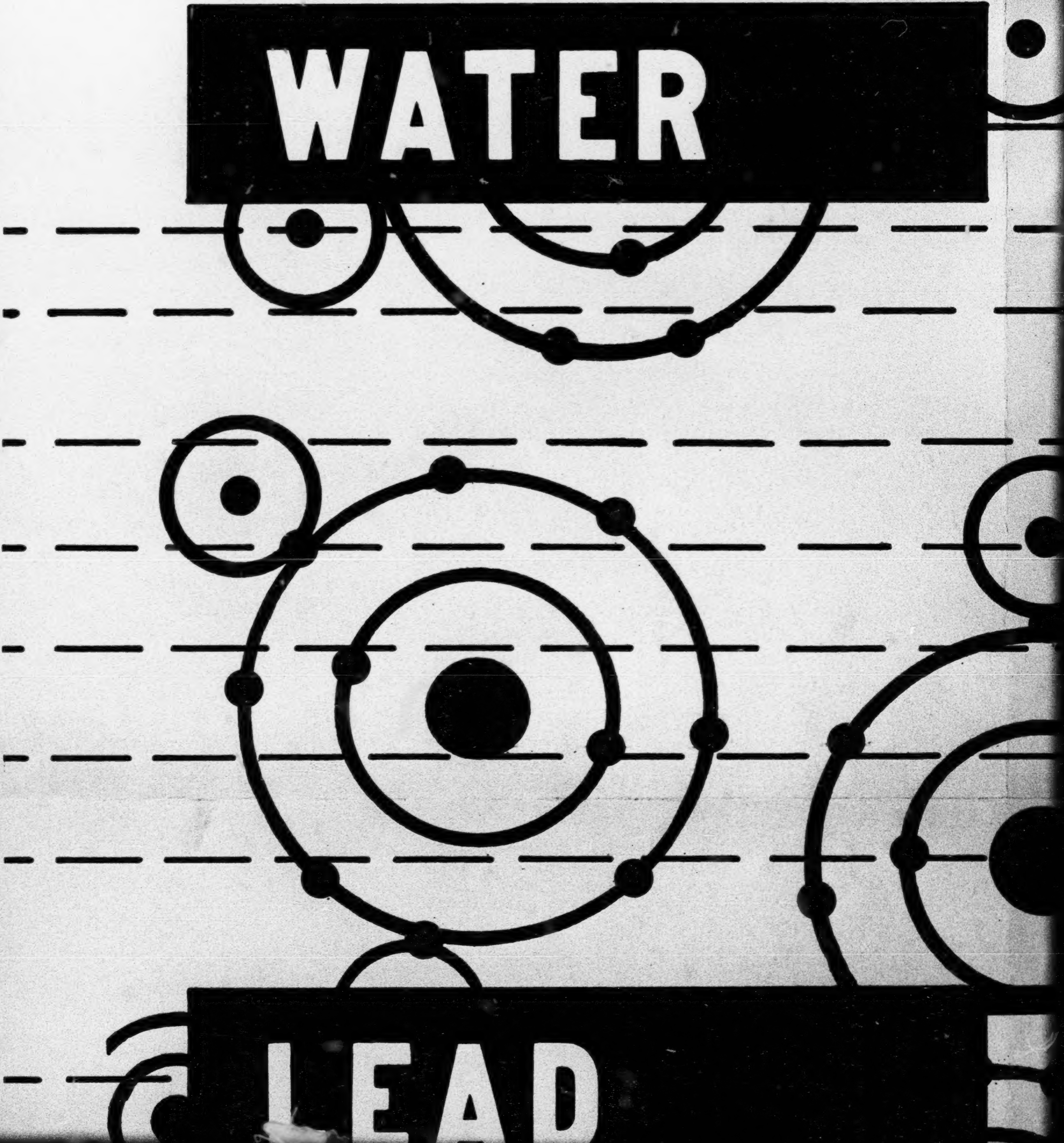

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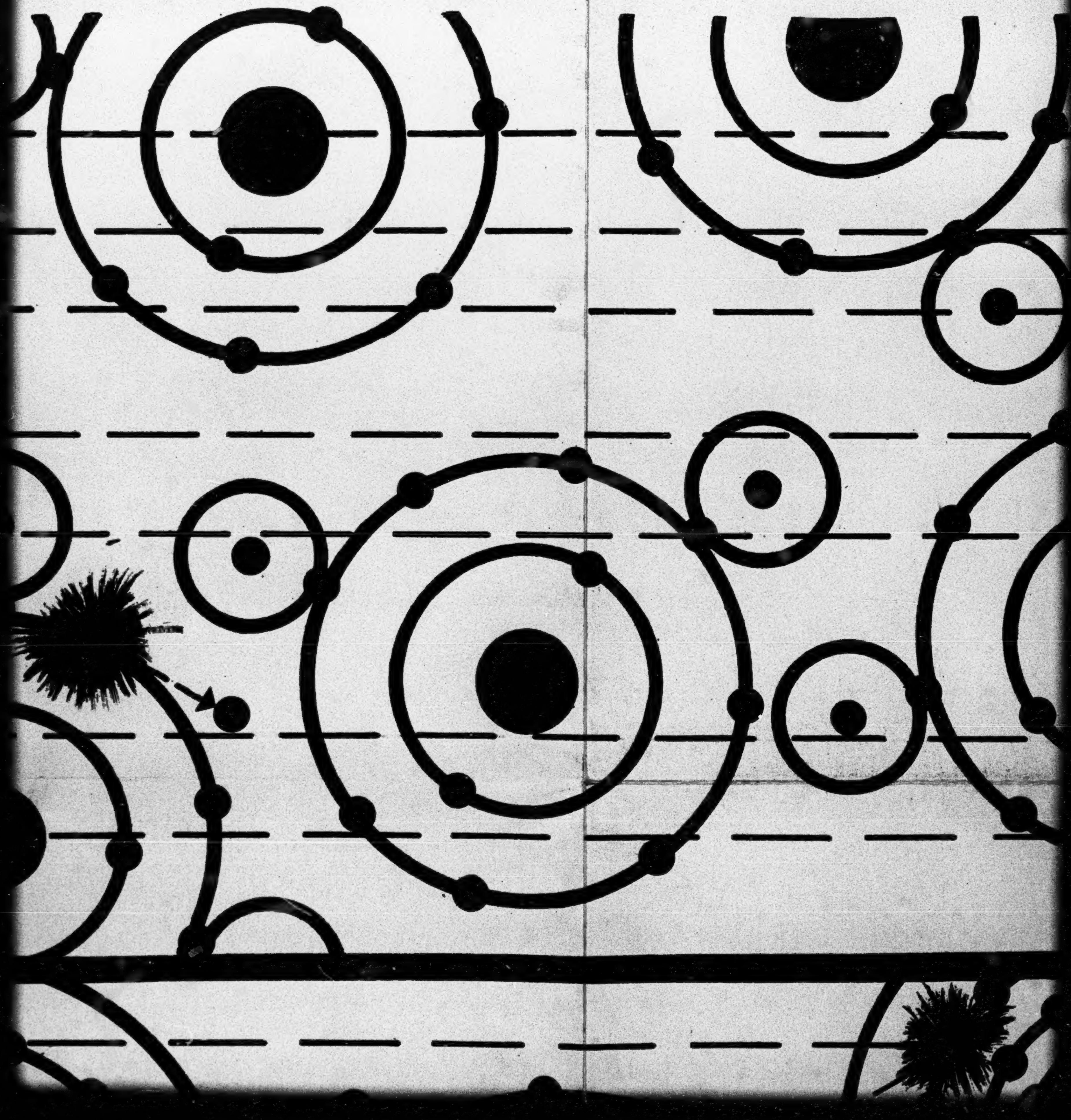

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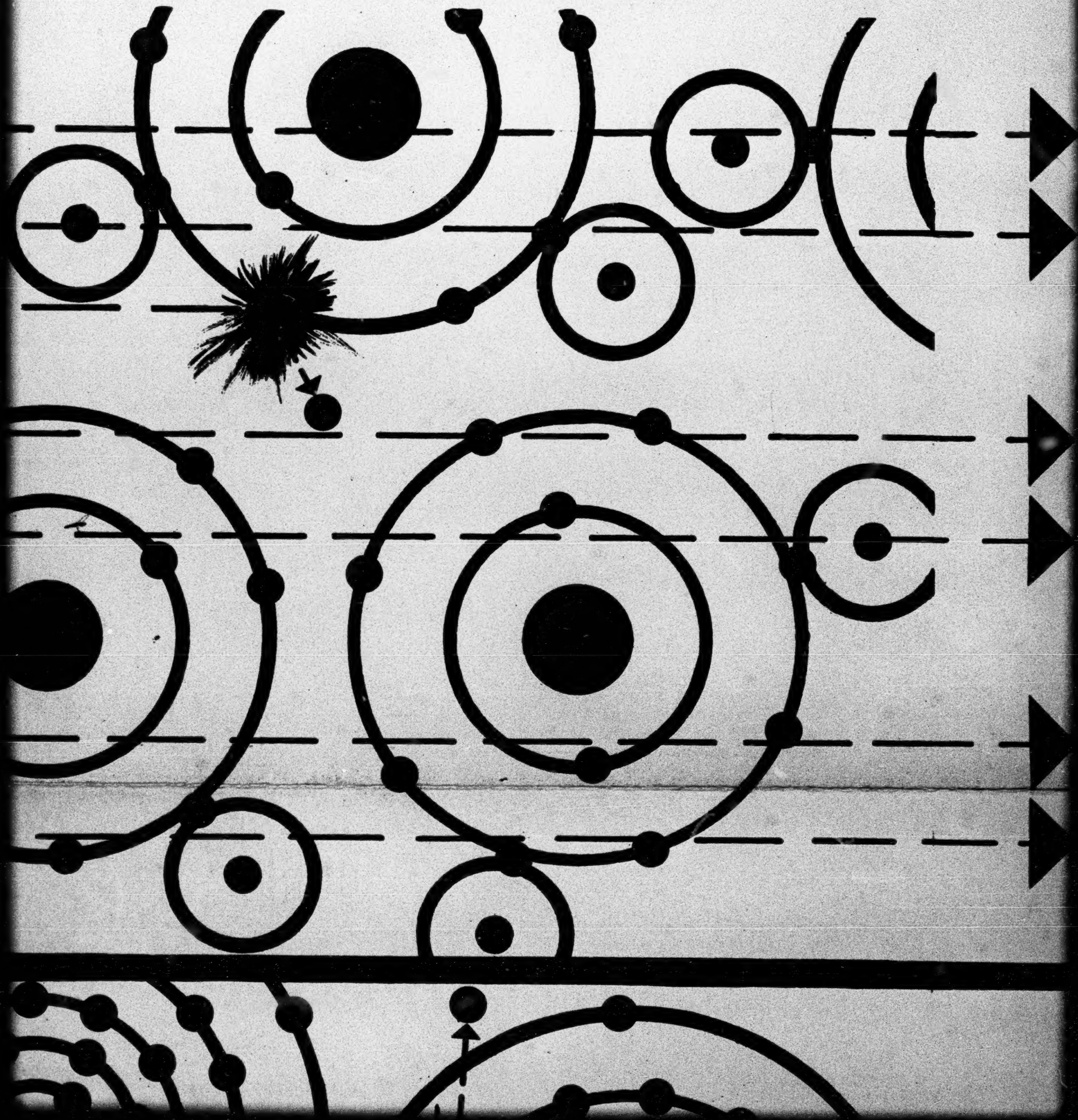

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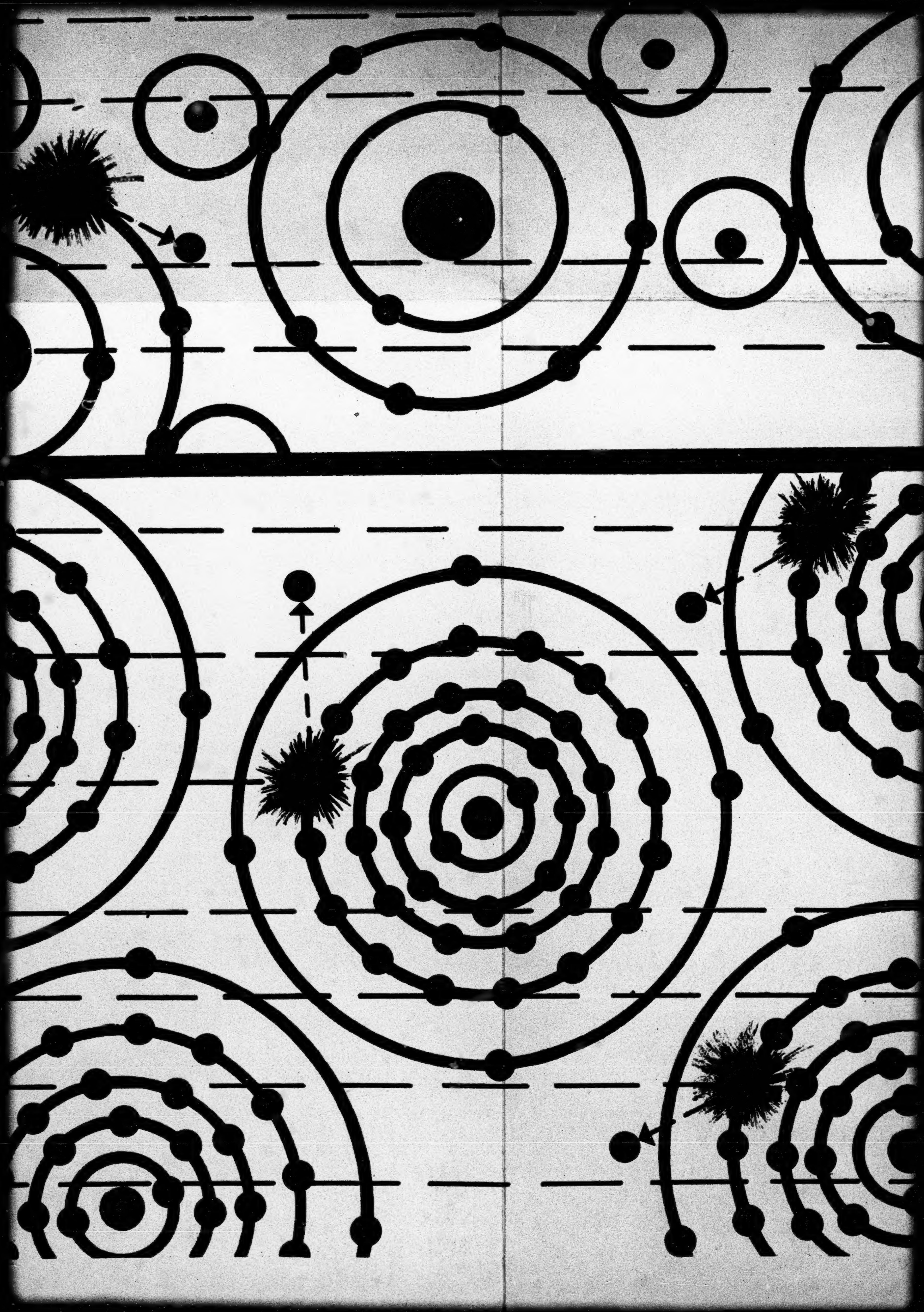

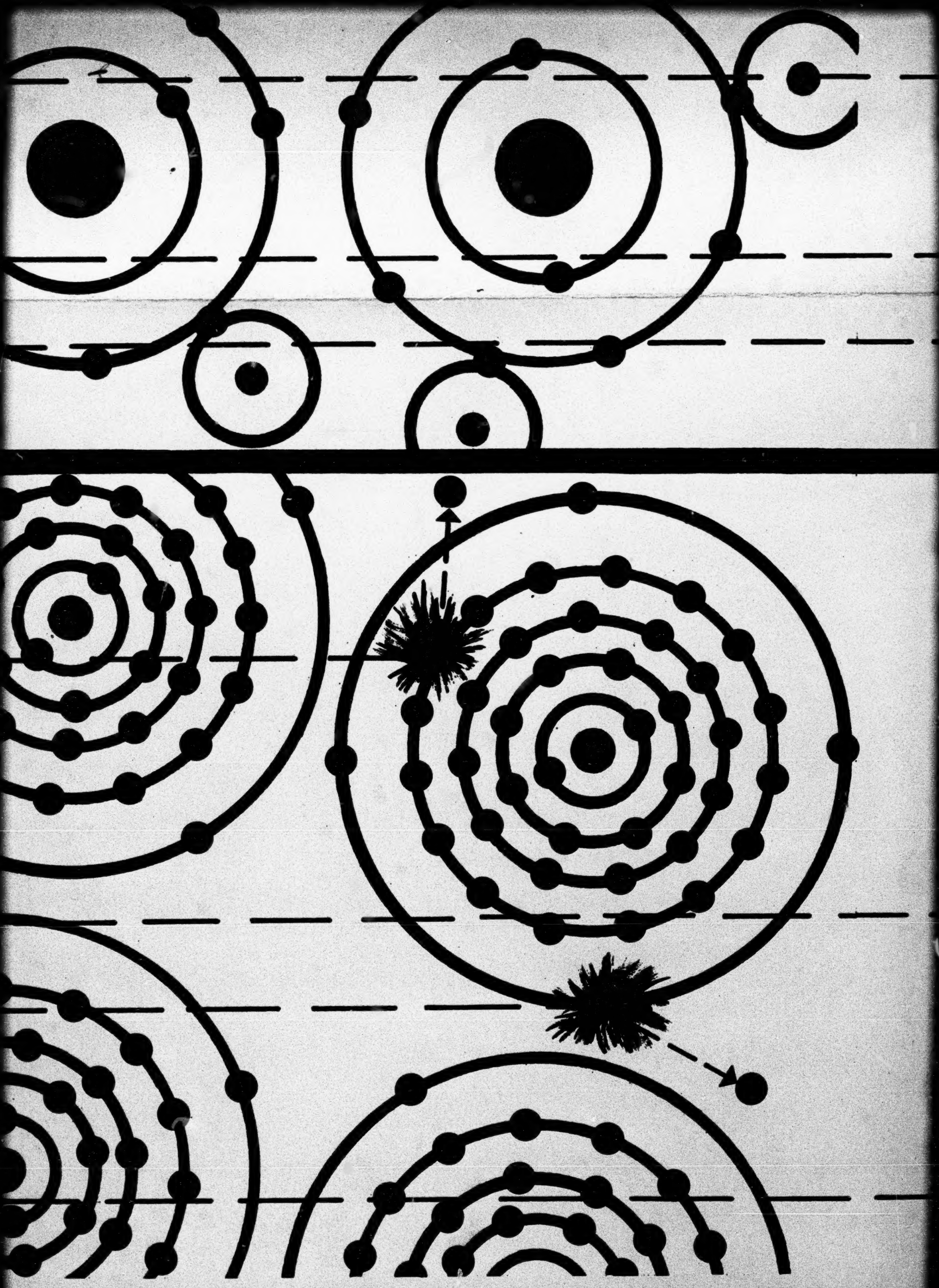

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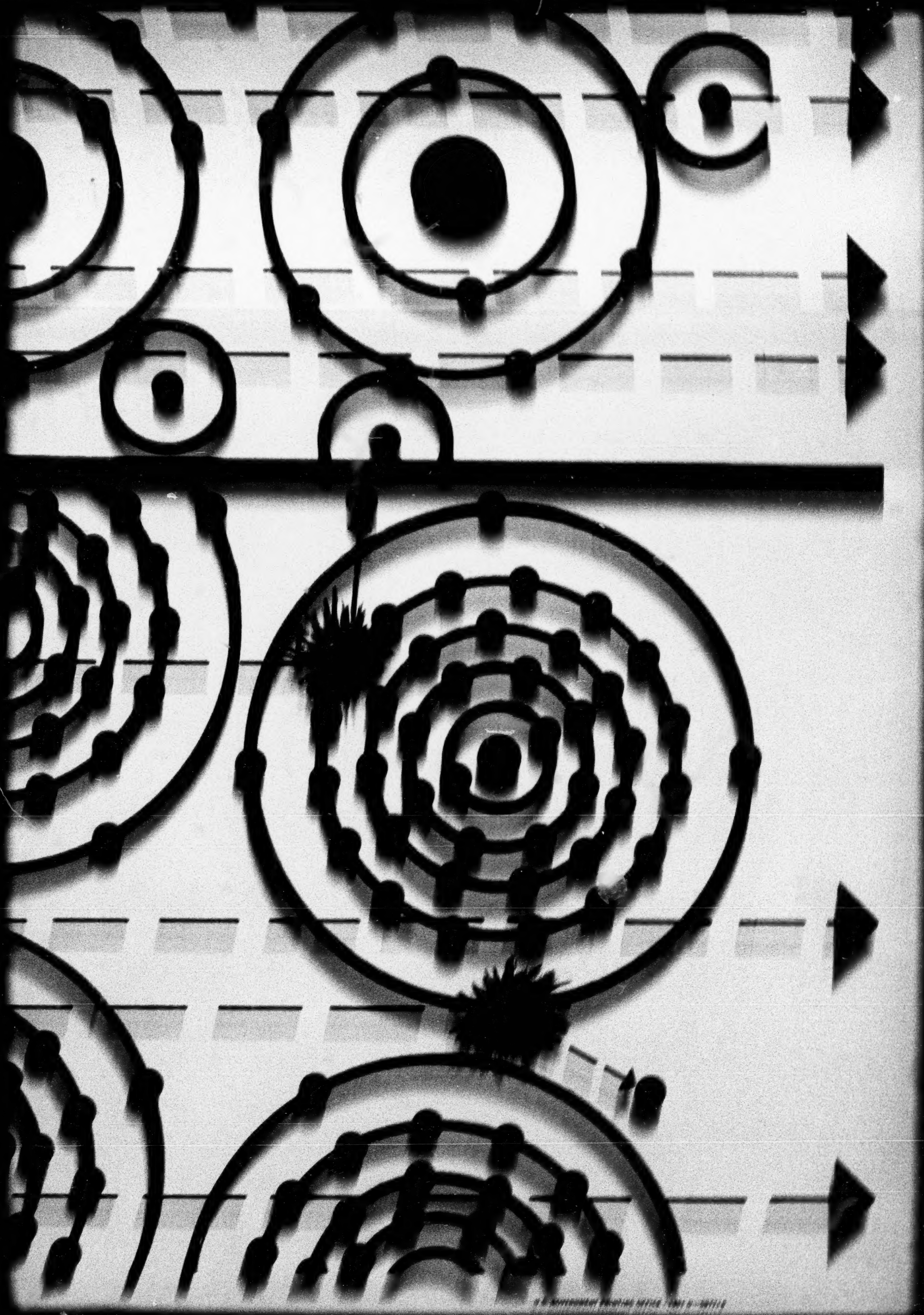

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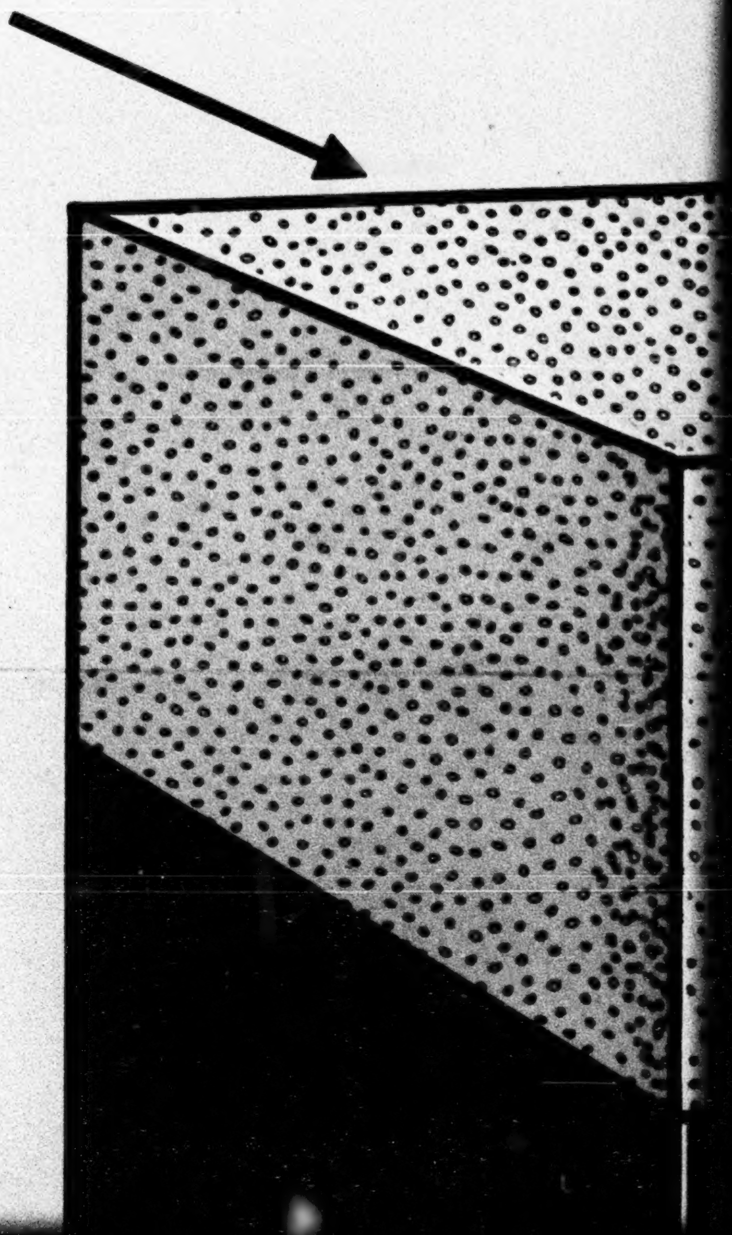

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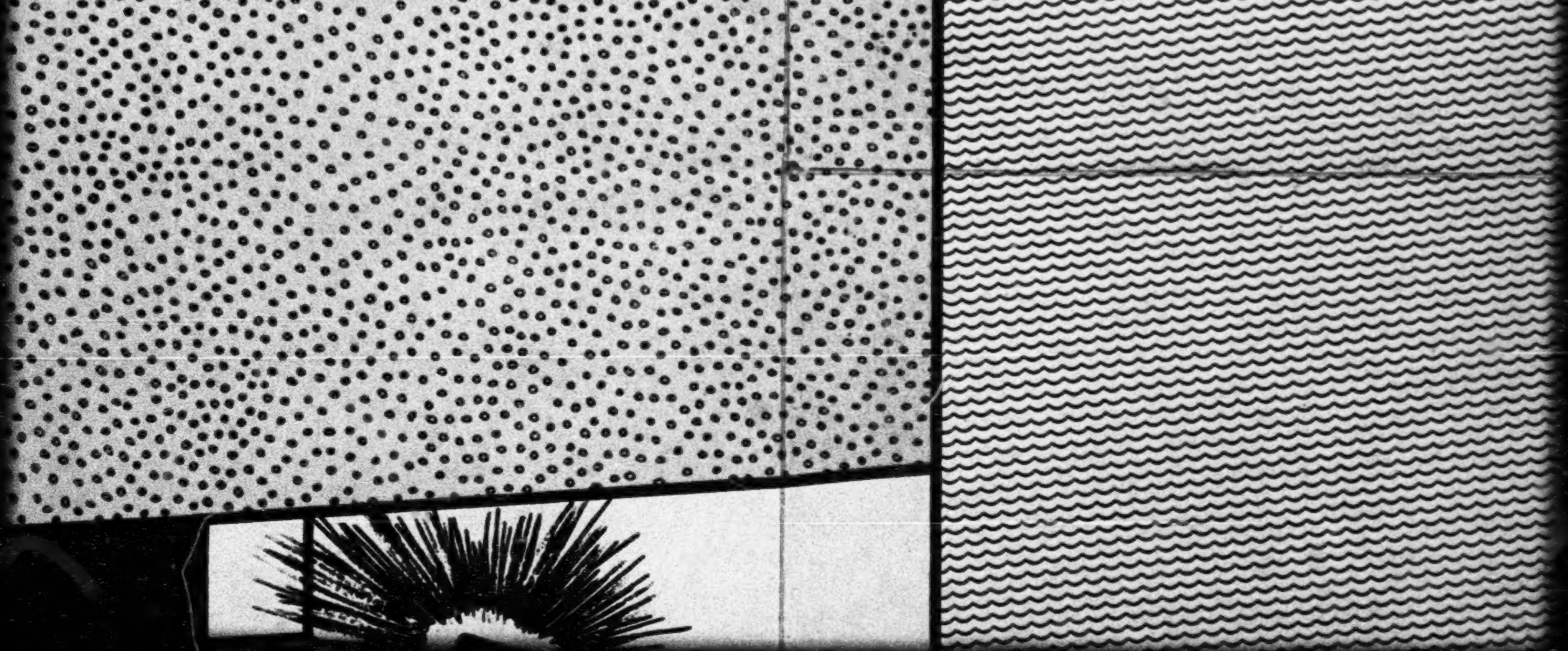

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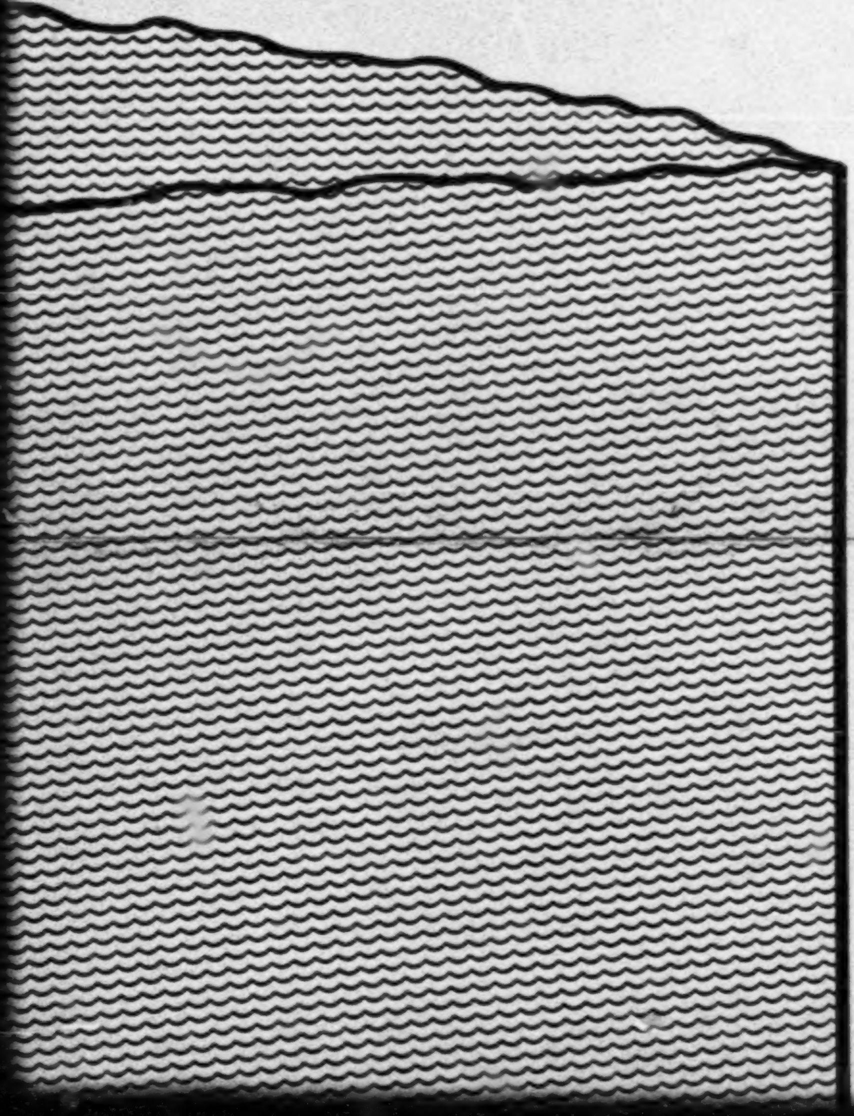
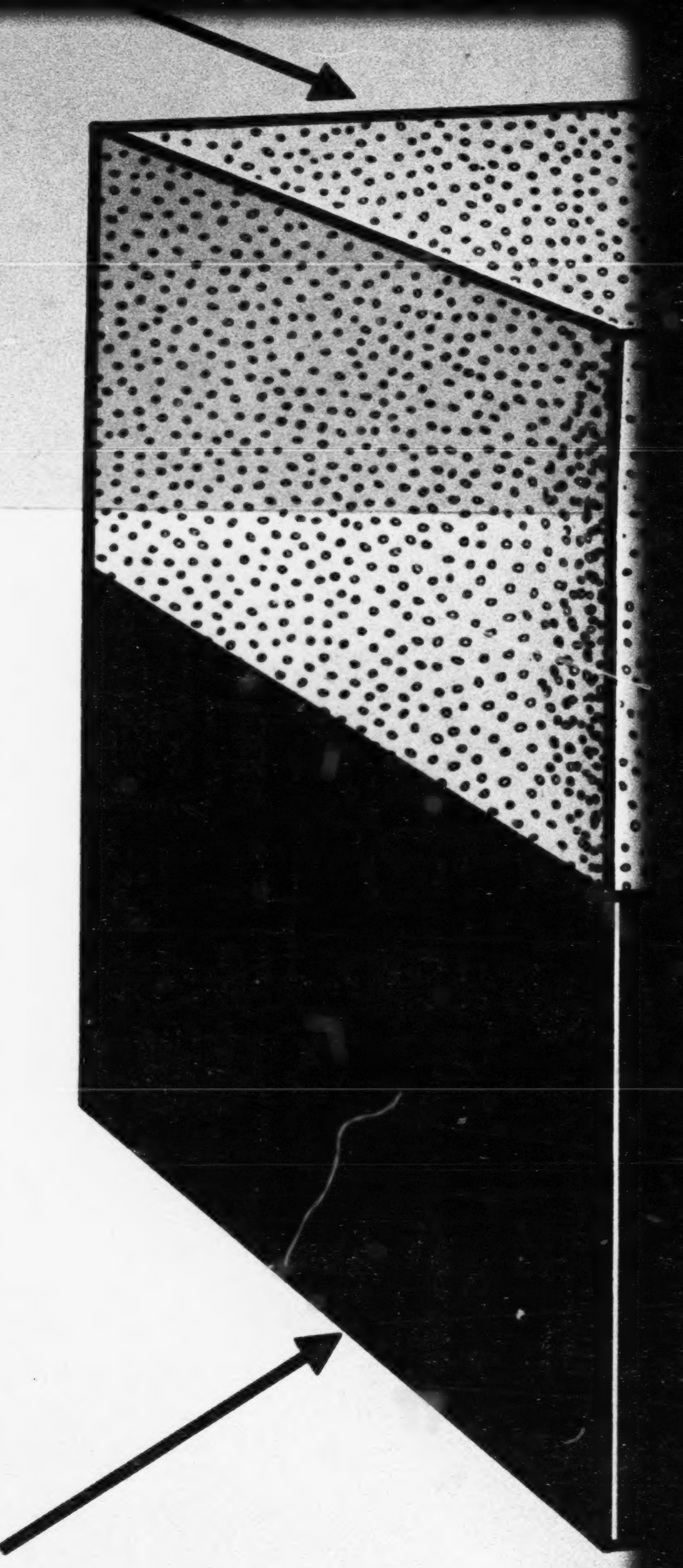
FOR SHIELDING RADIATION





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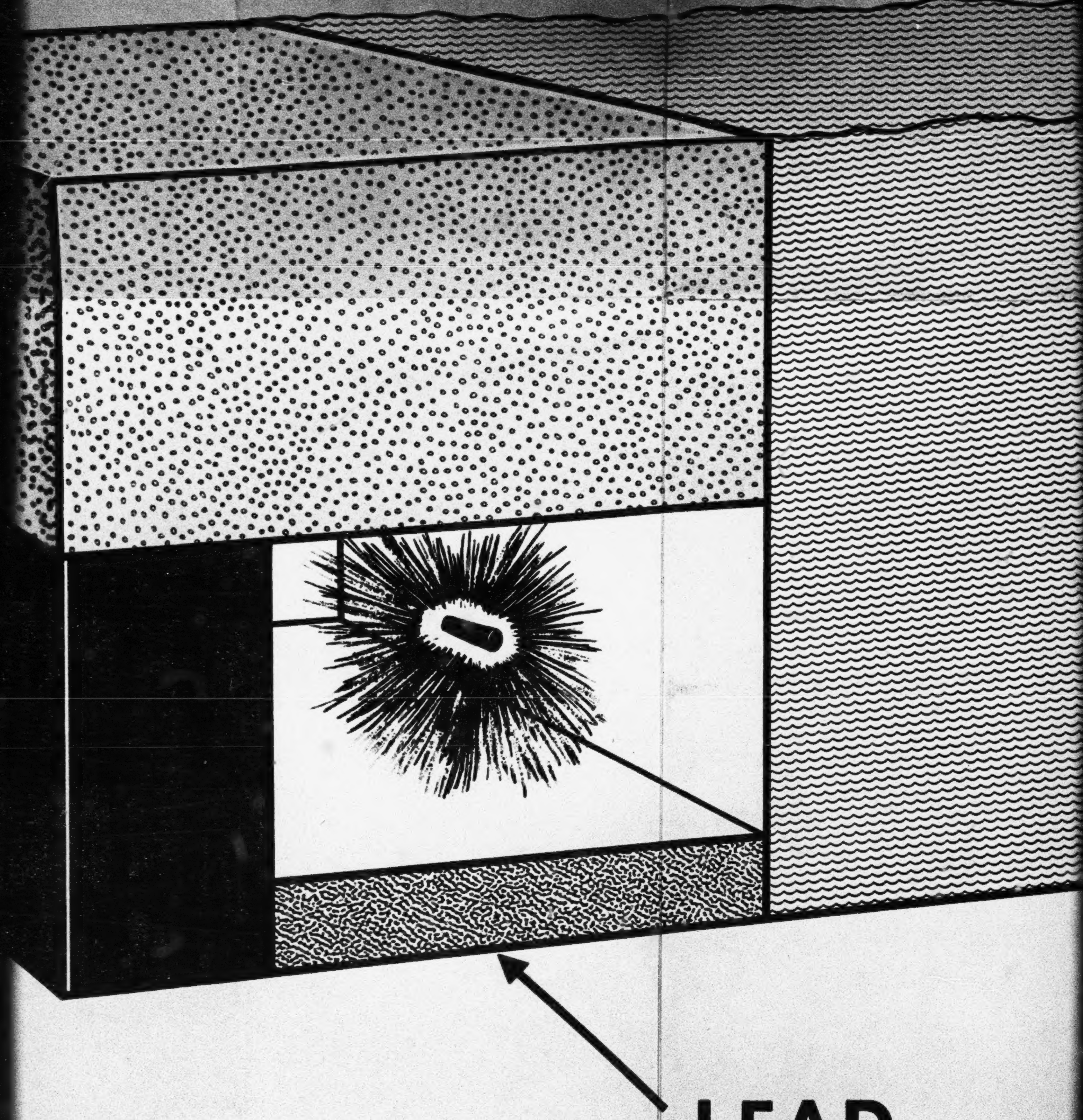
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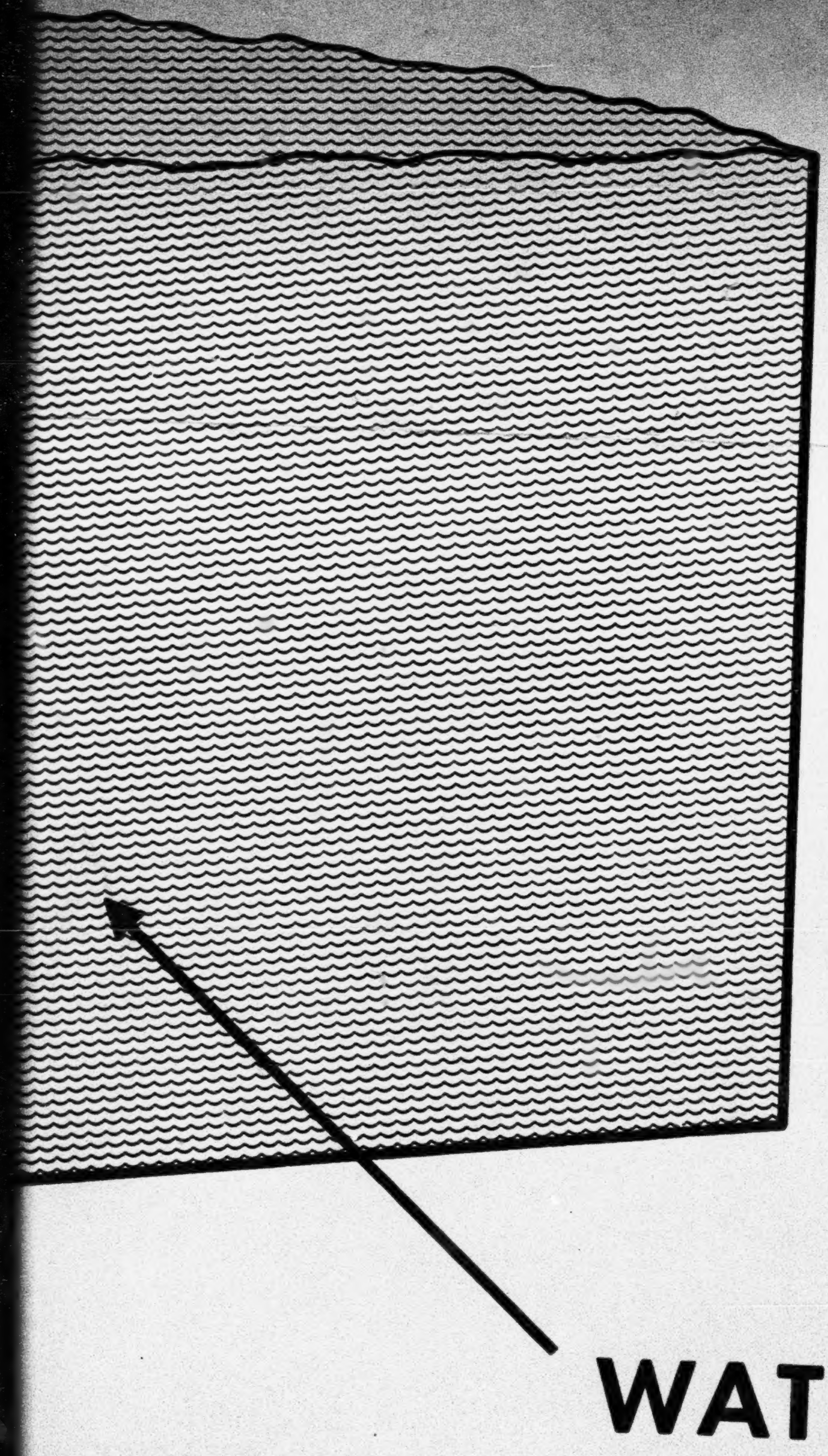

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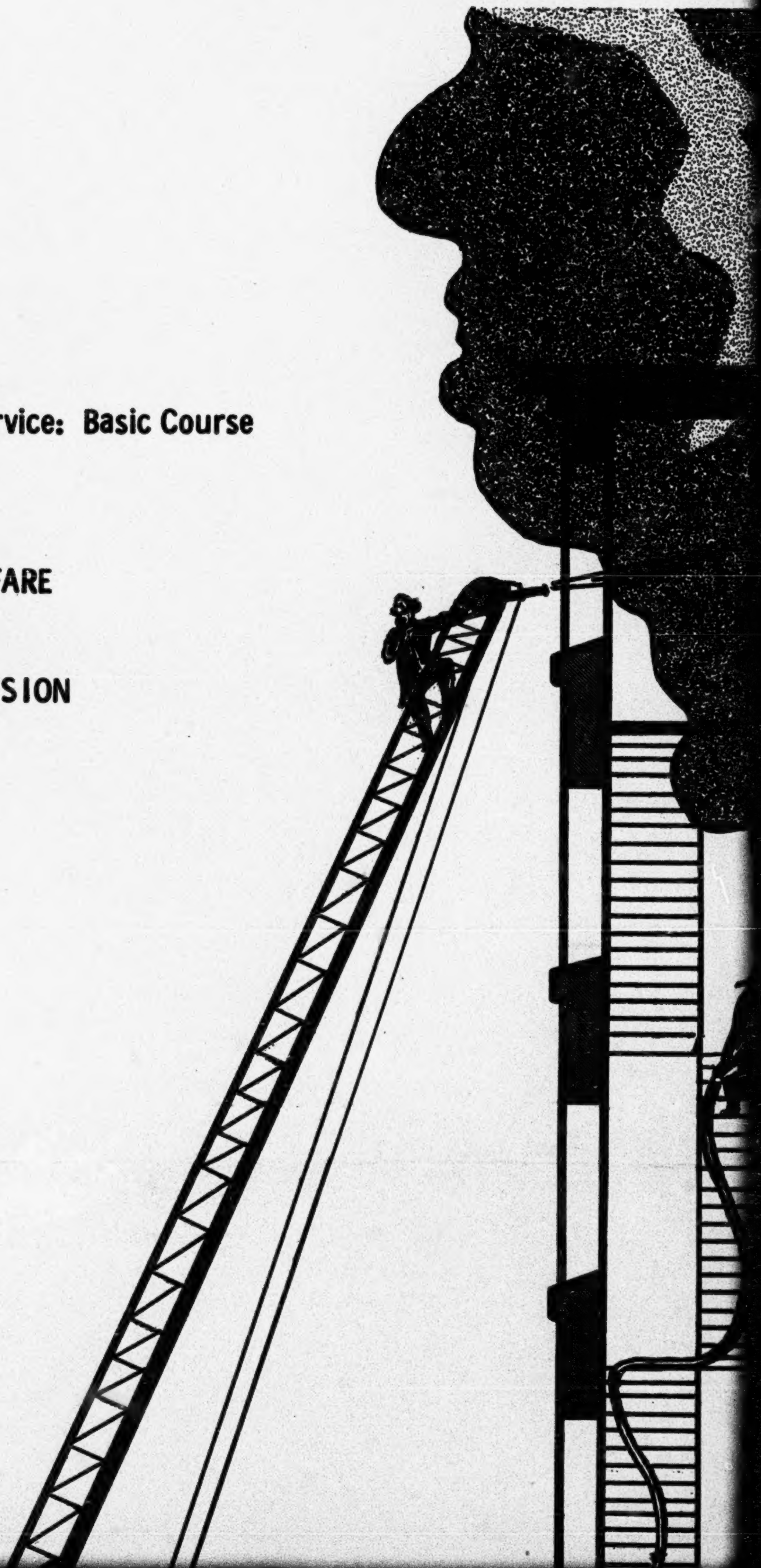
FIRE PROBLEM



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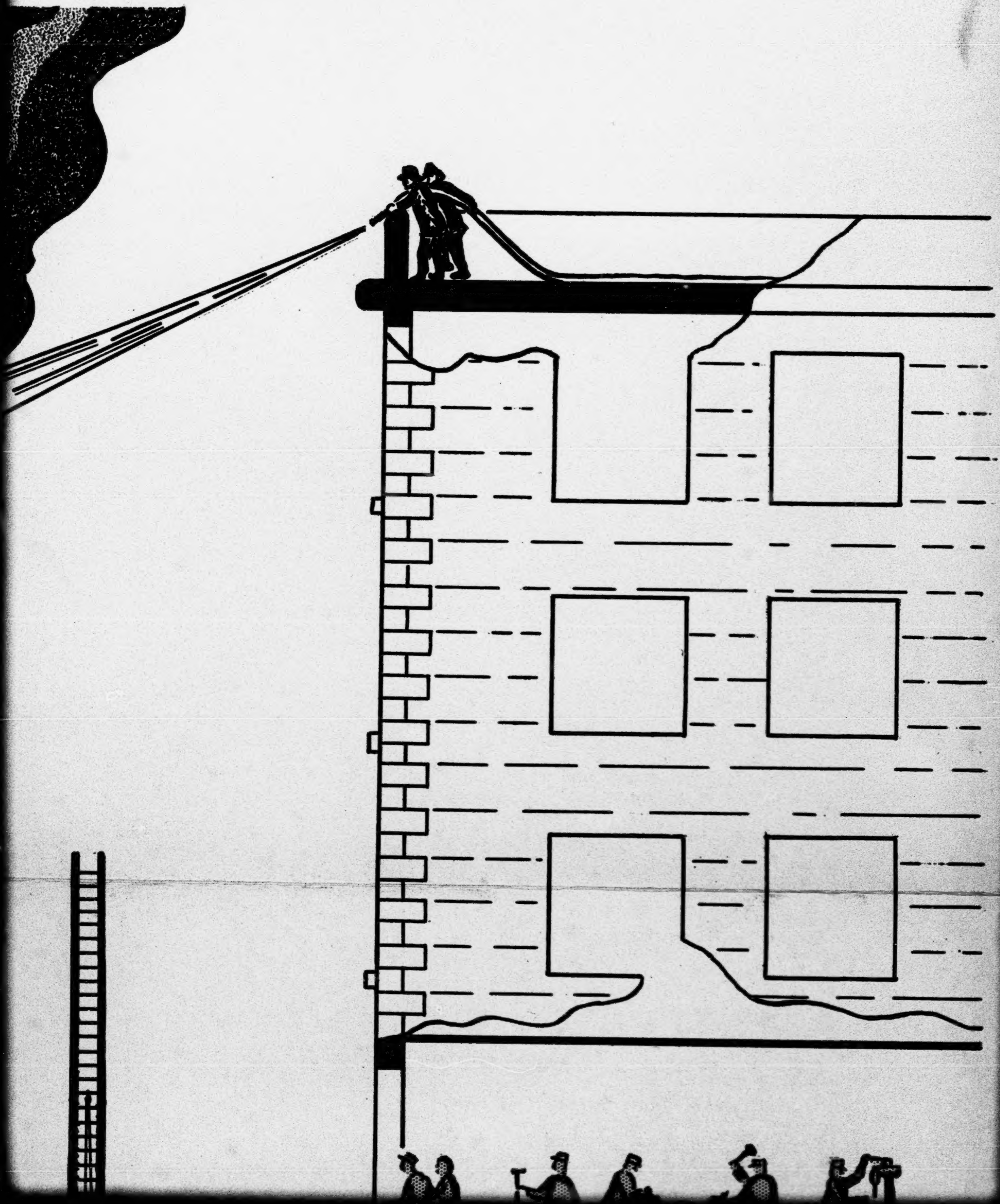

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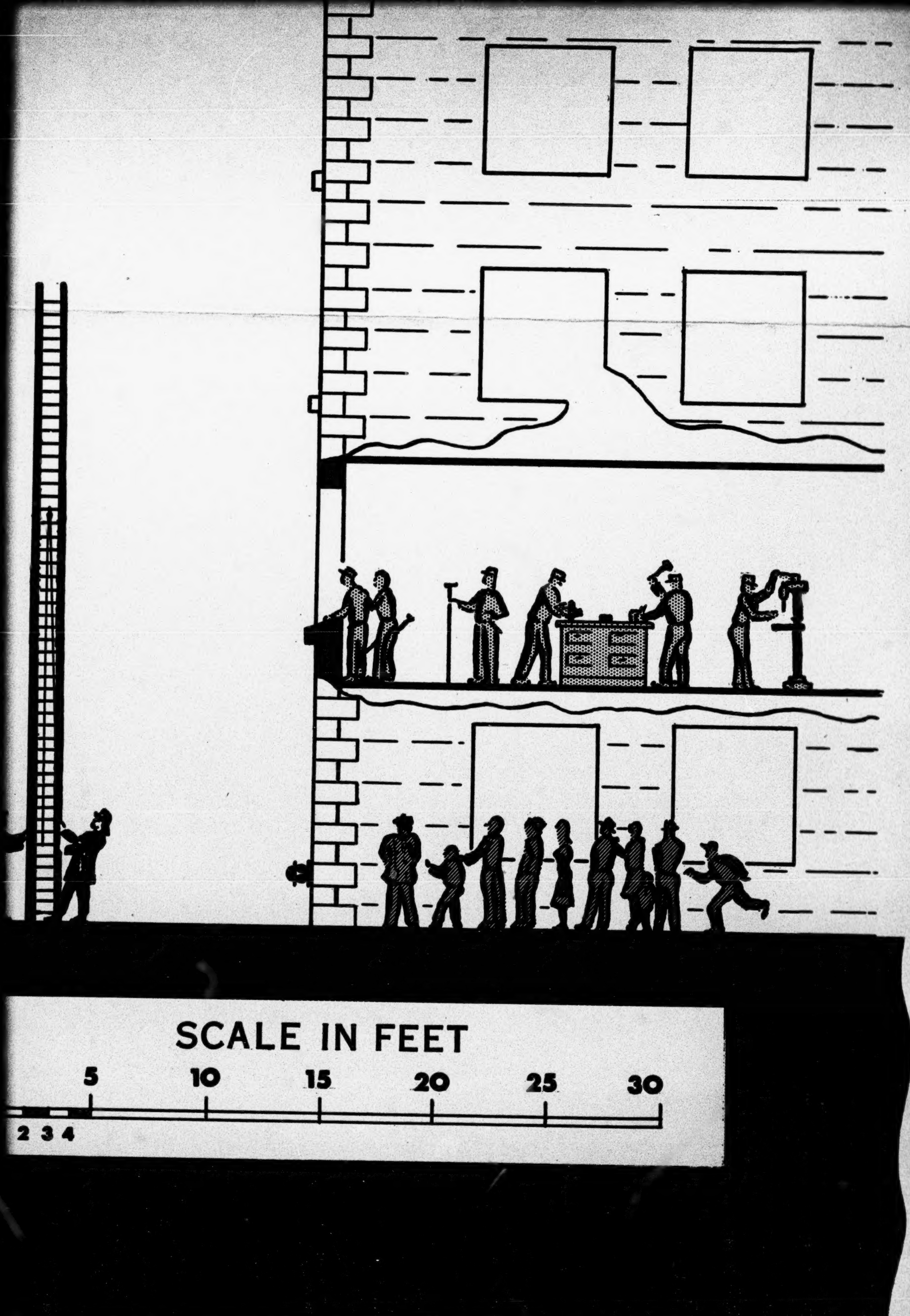
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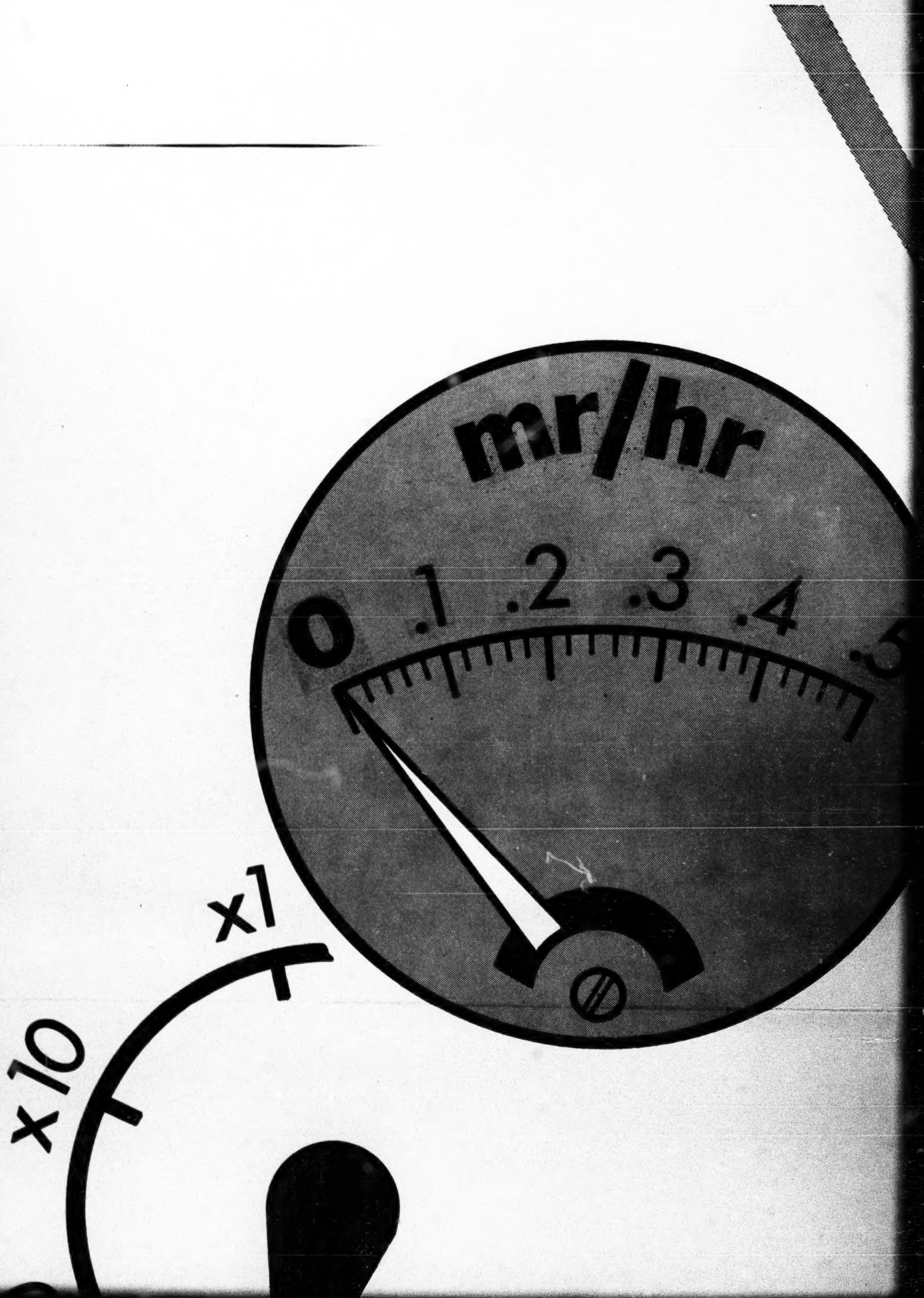

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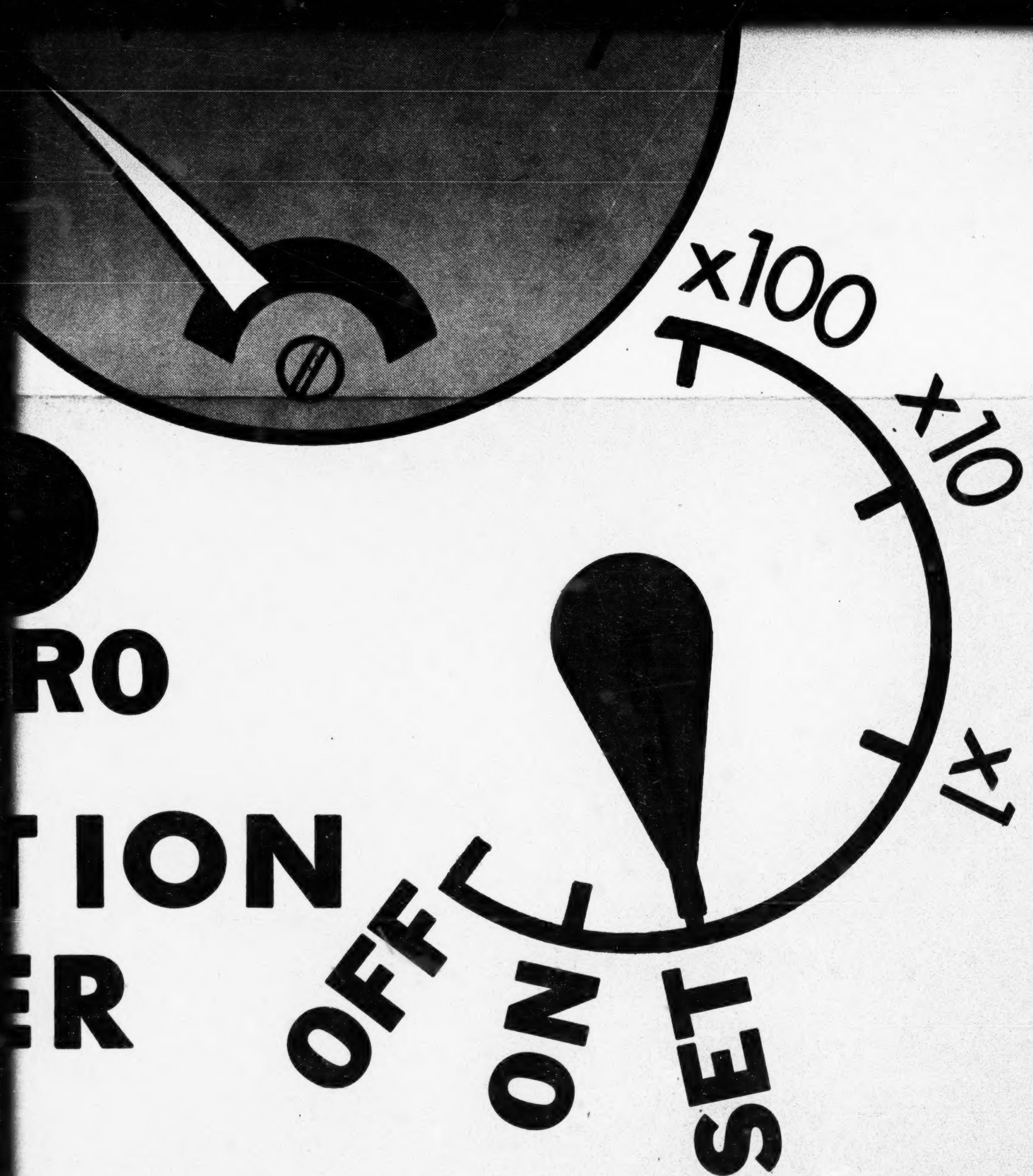

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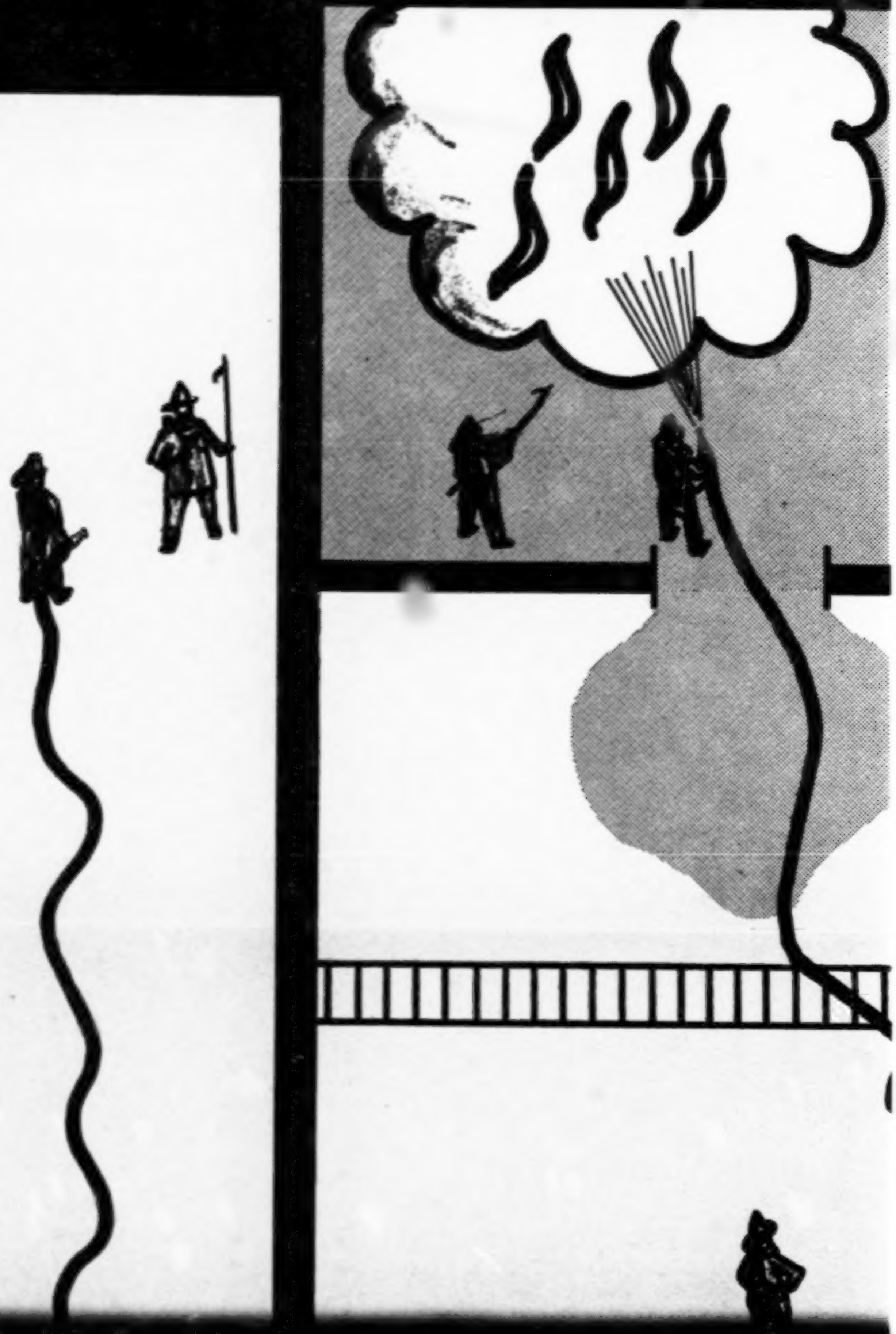

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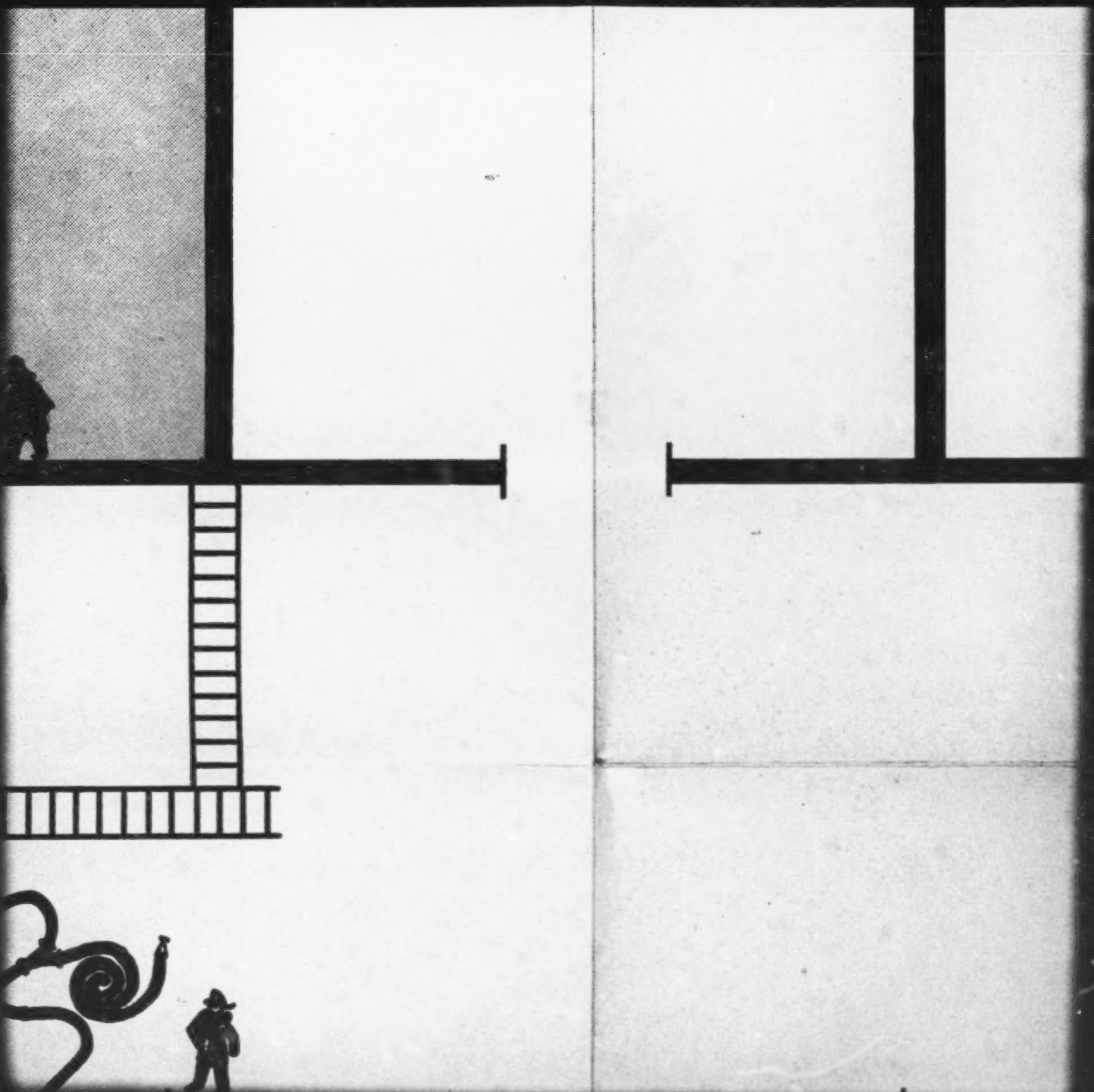

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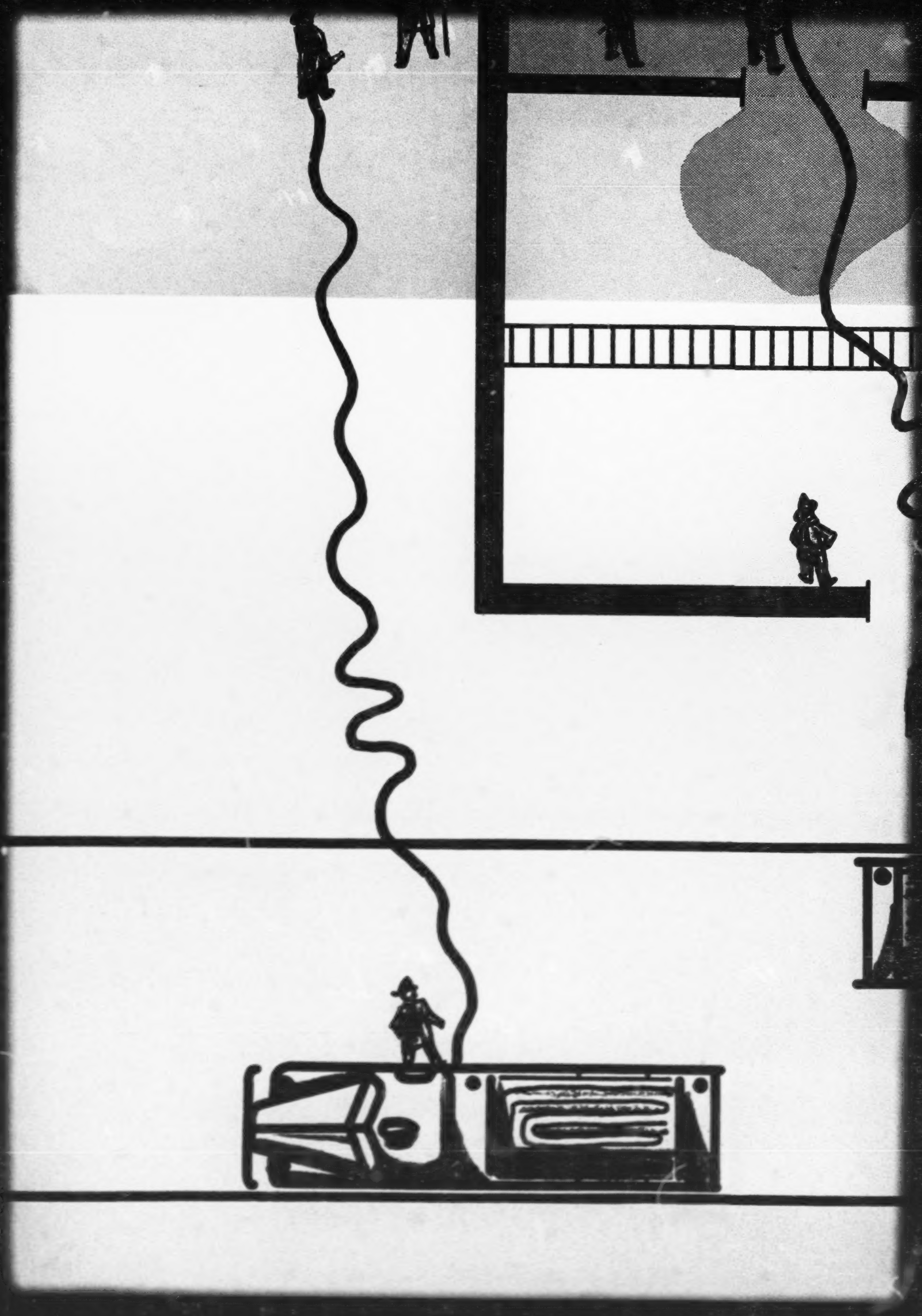

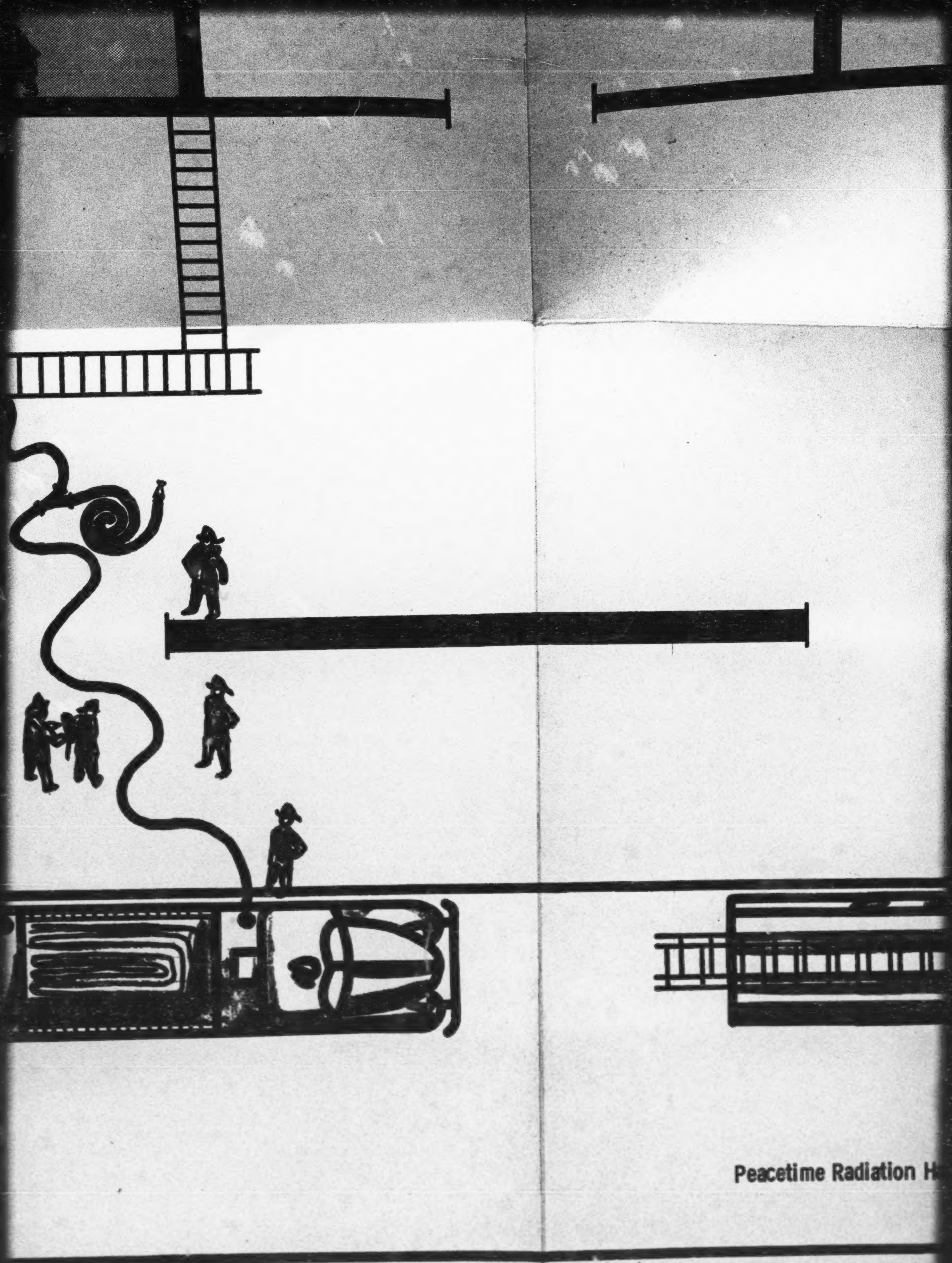

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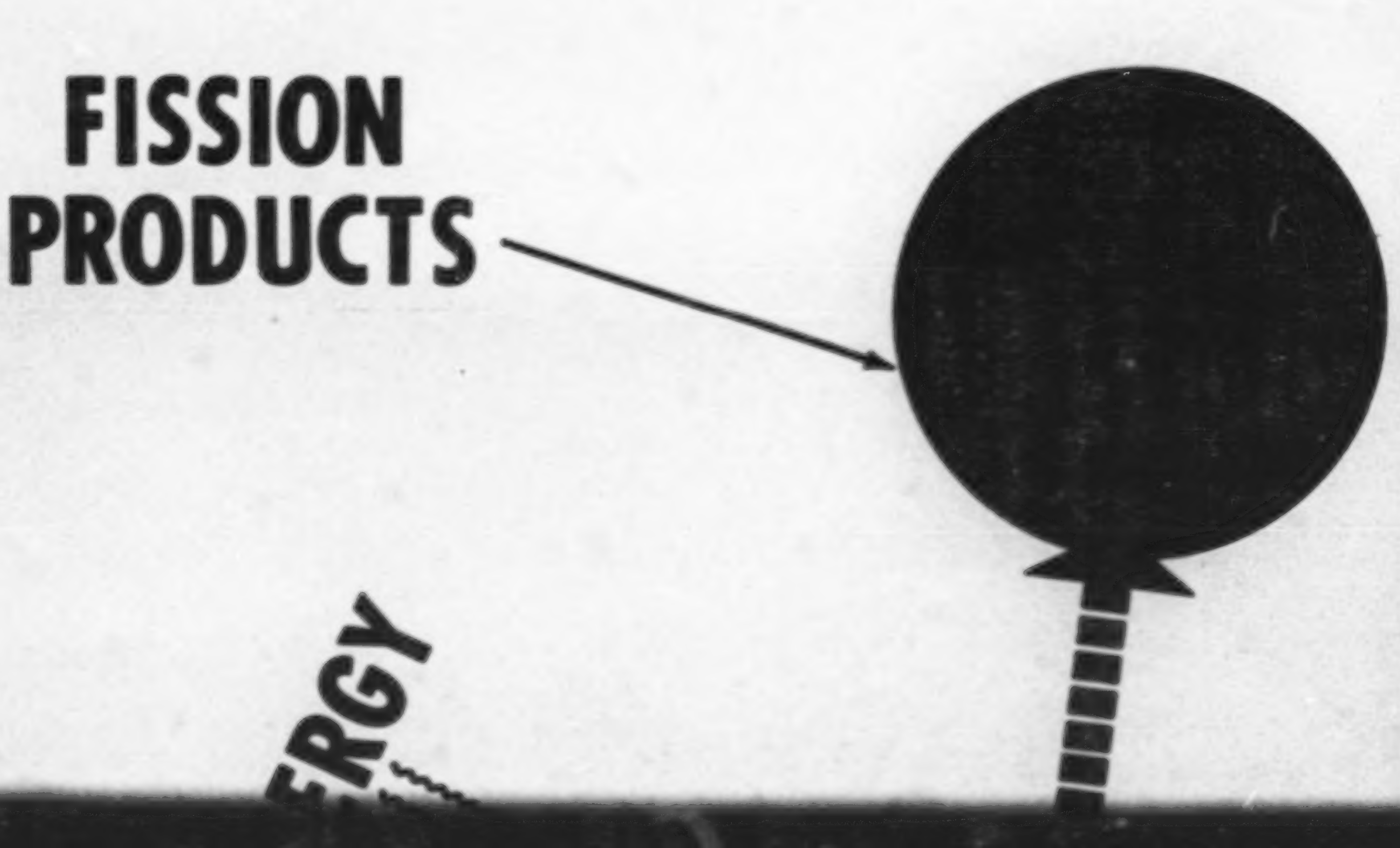
NUCLEAR CHAIN REACTION



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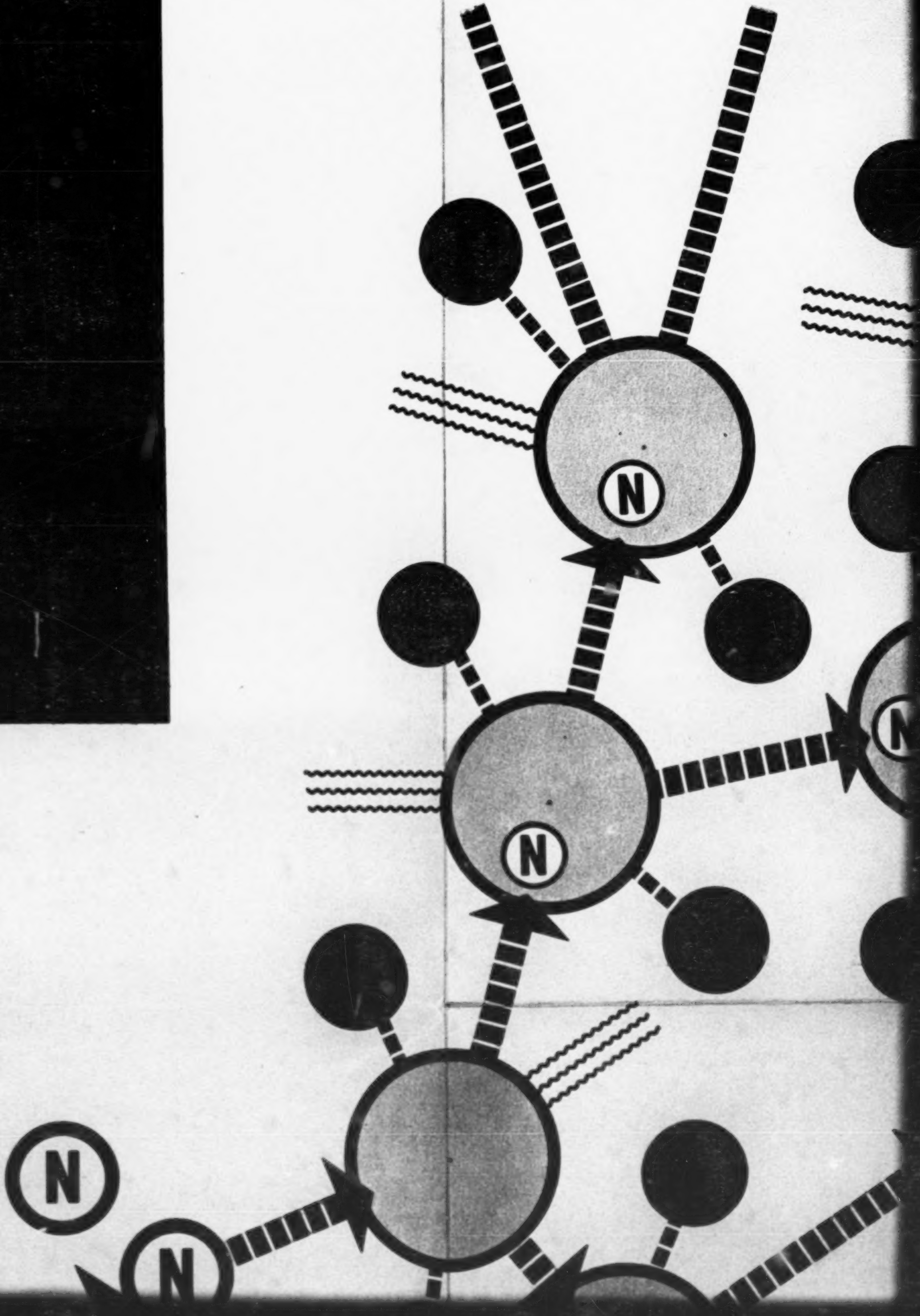

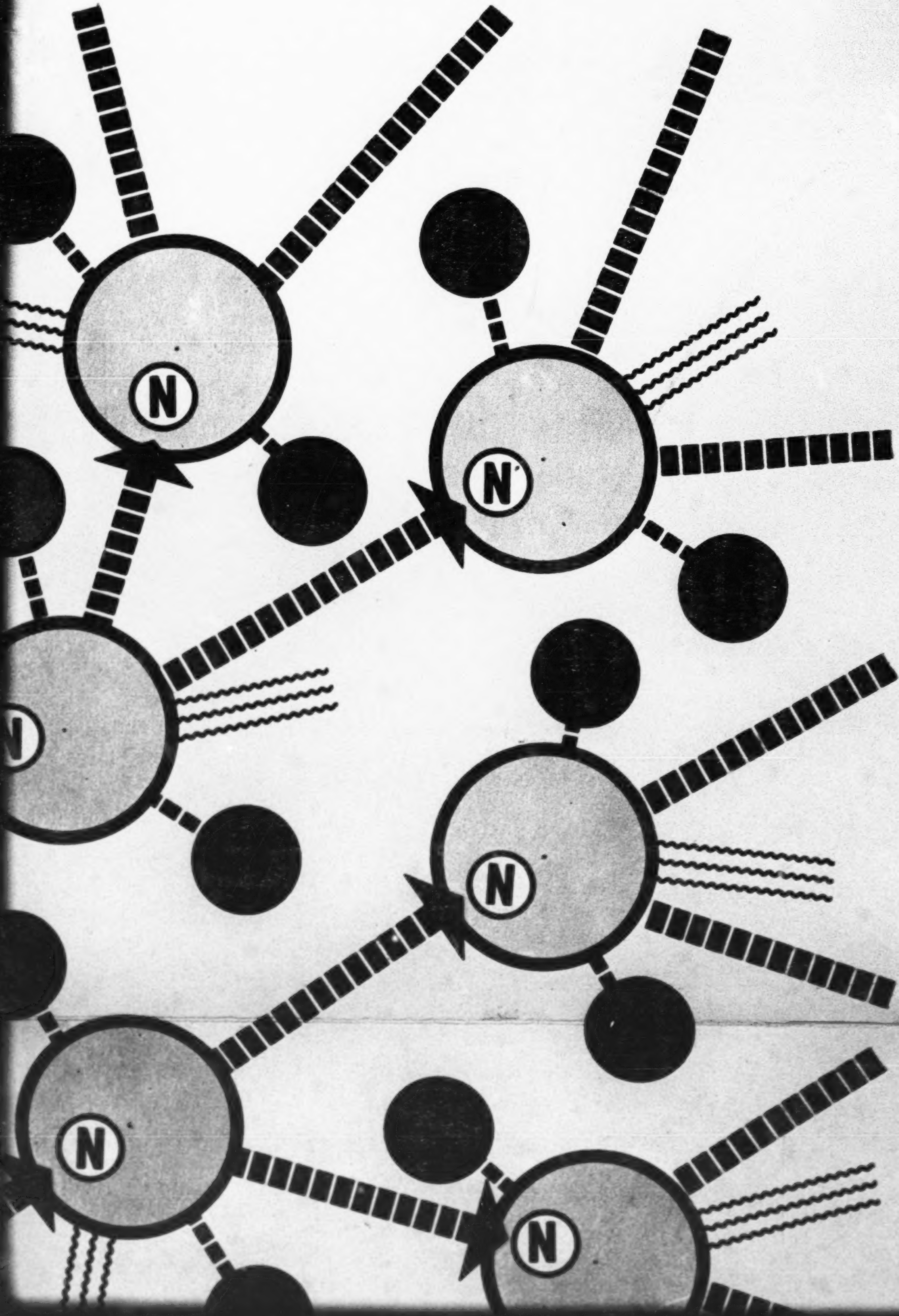
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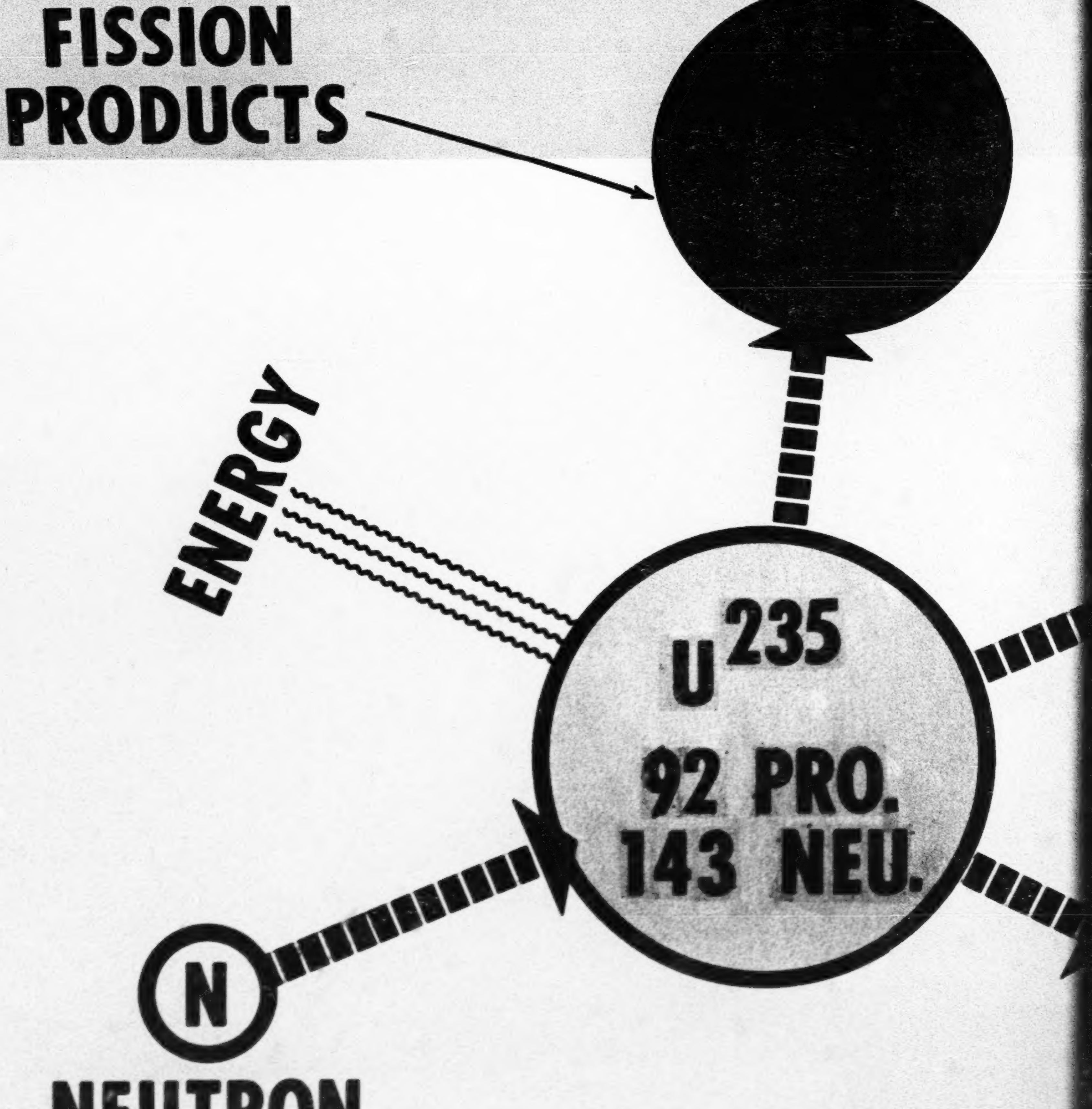

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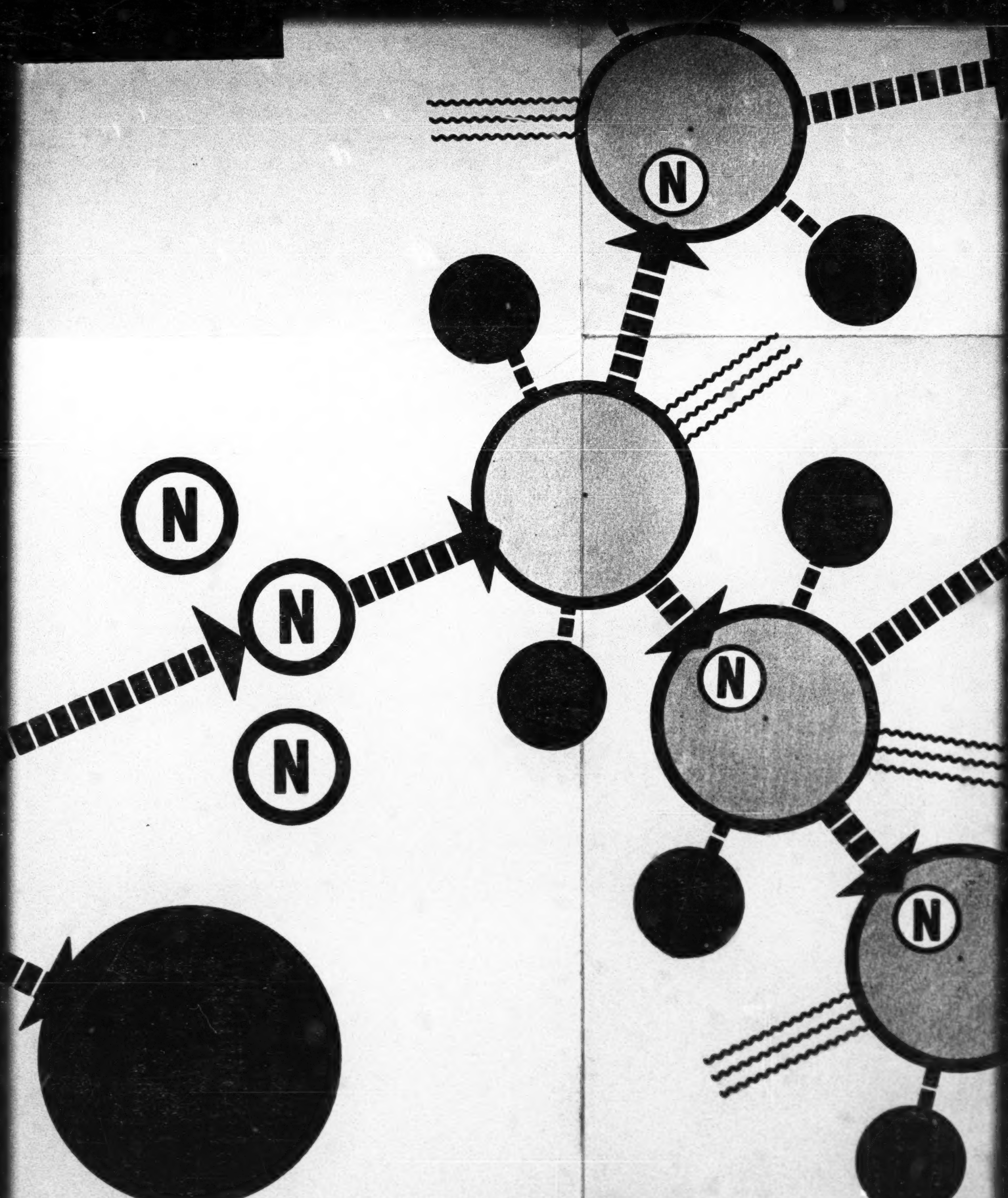

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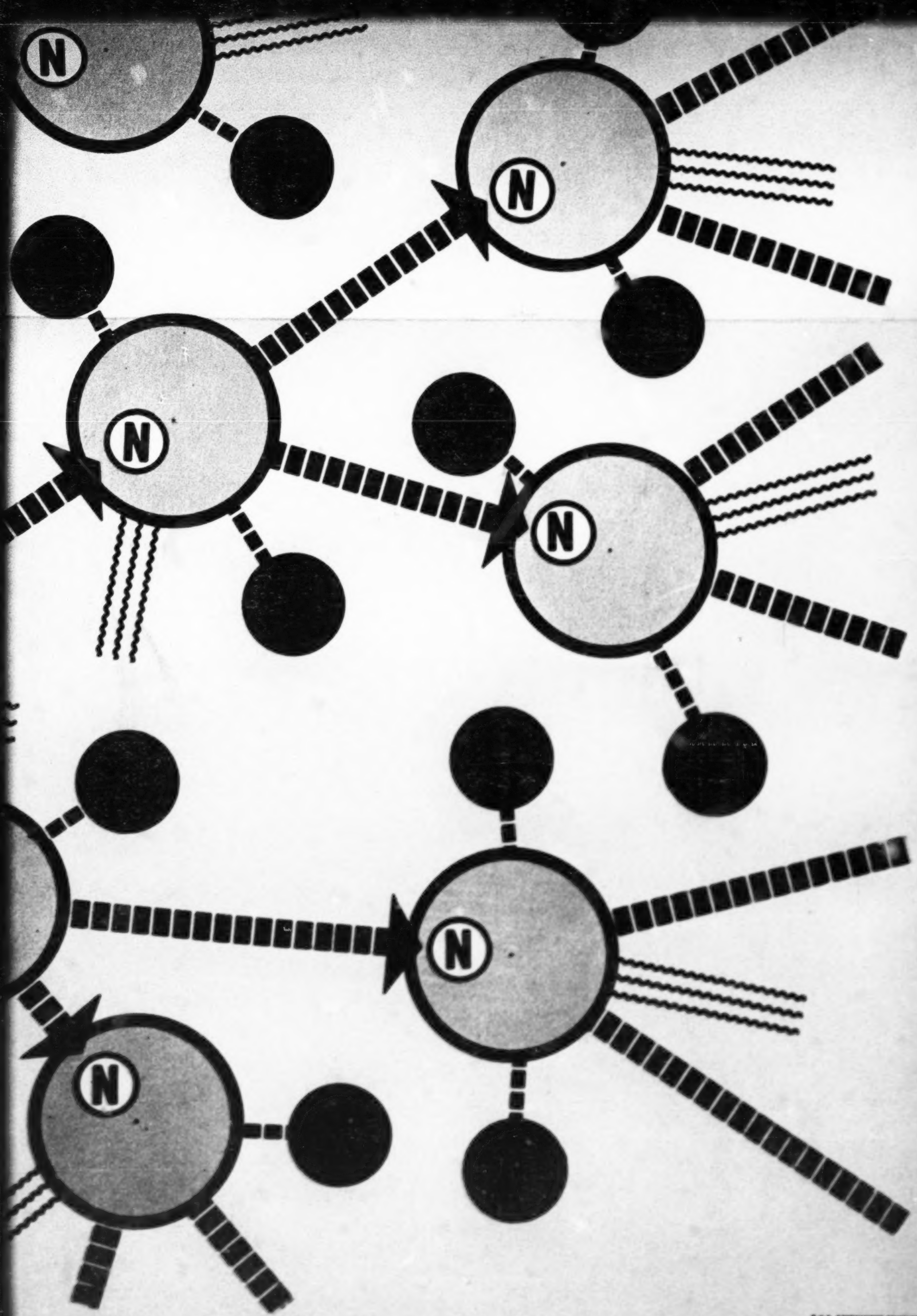
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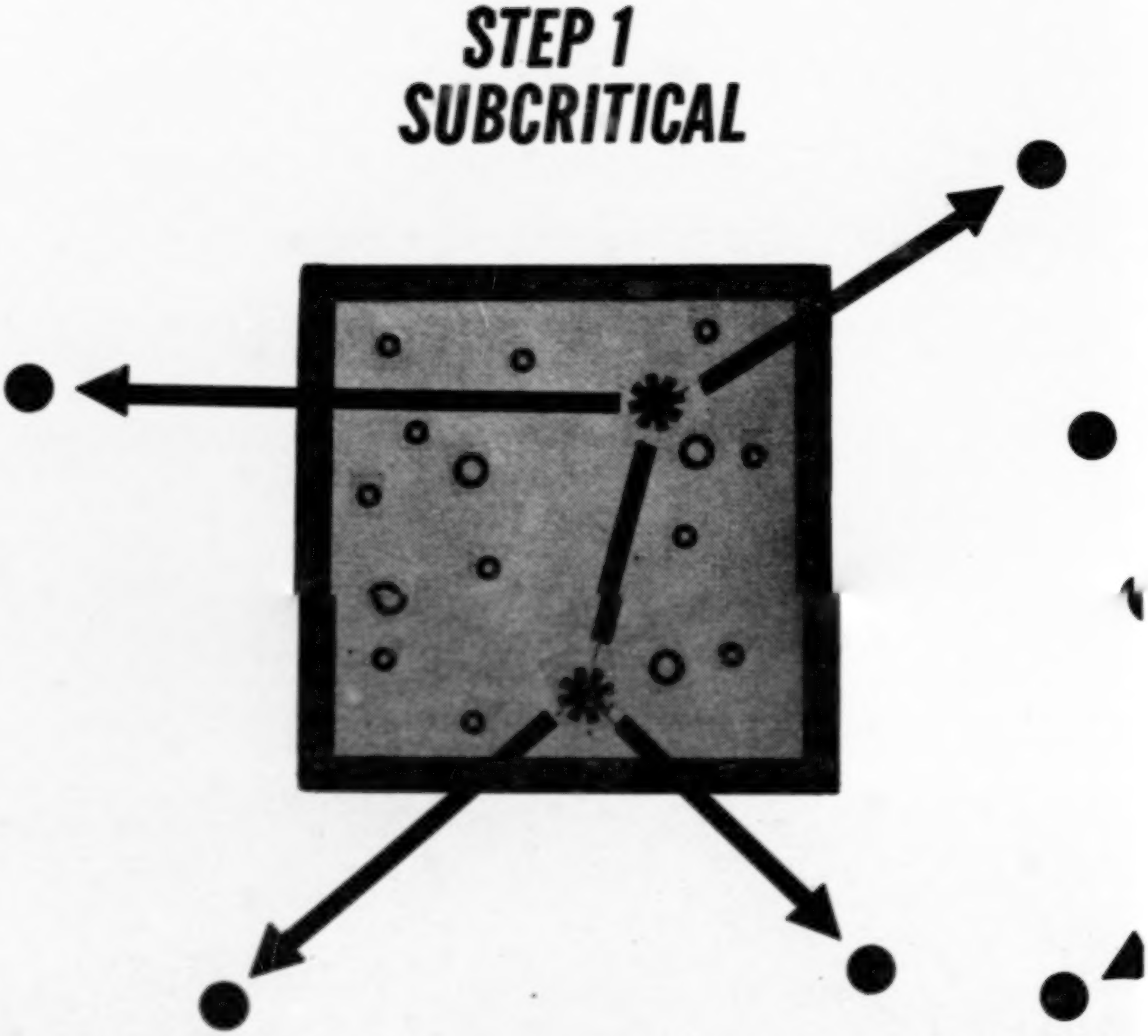

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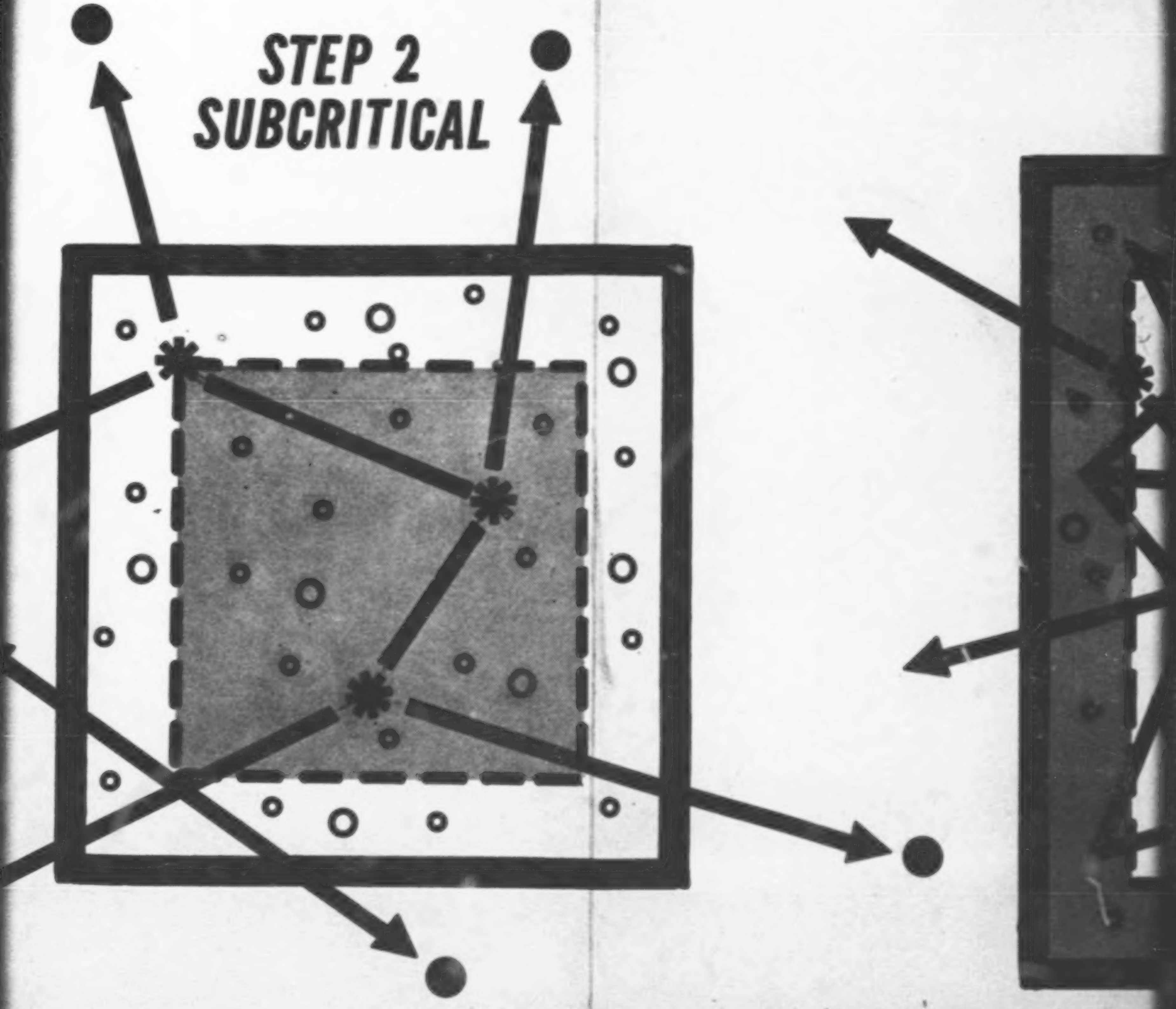

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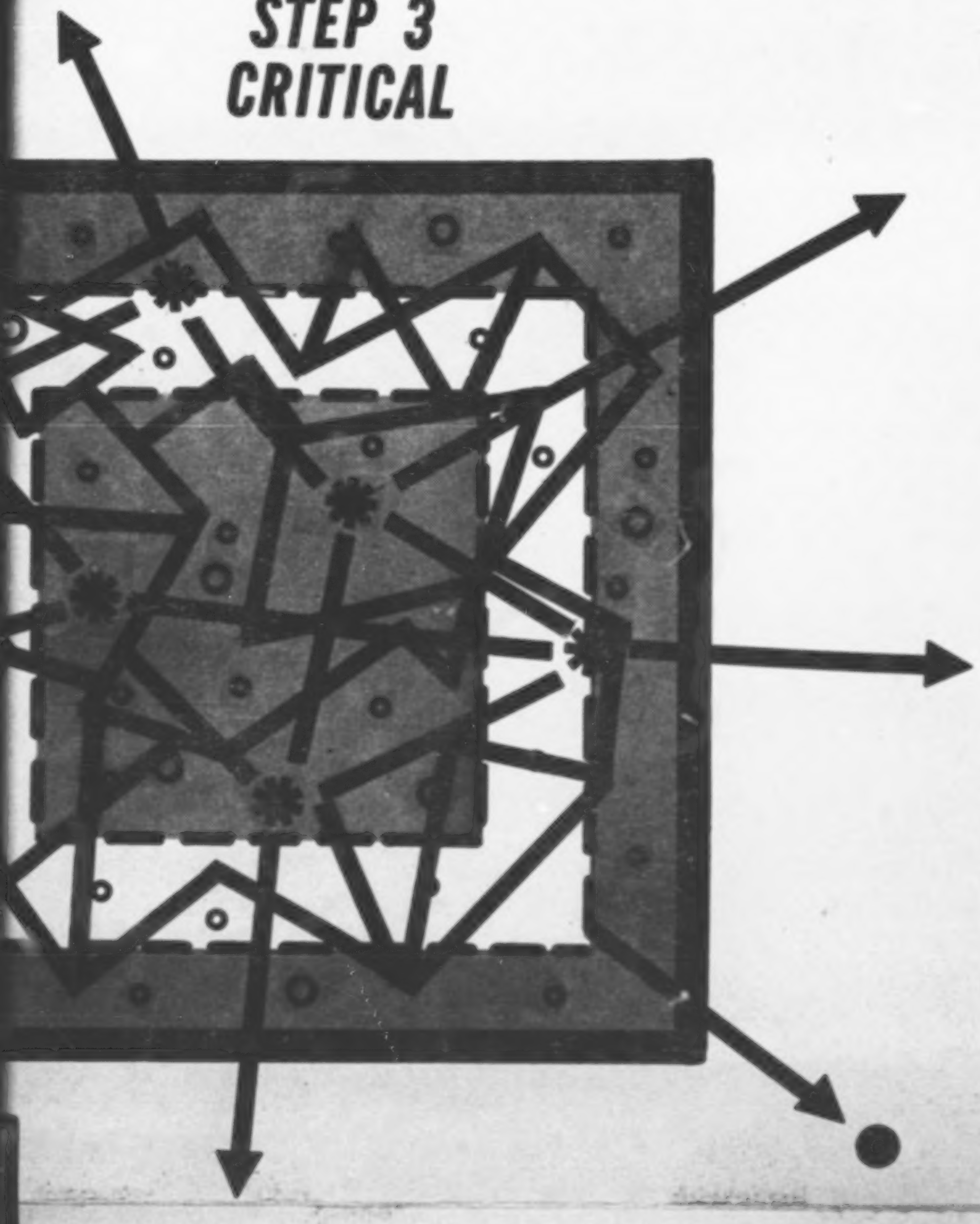

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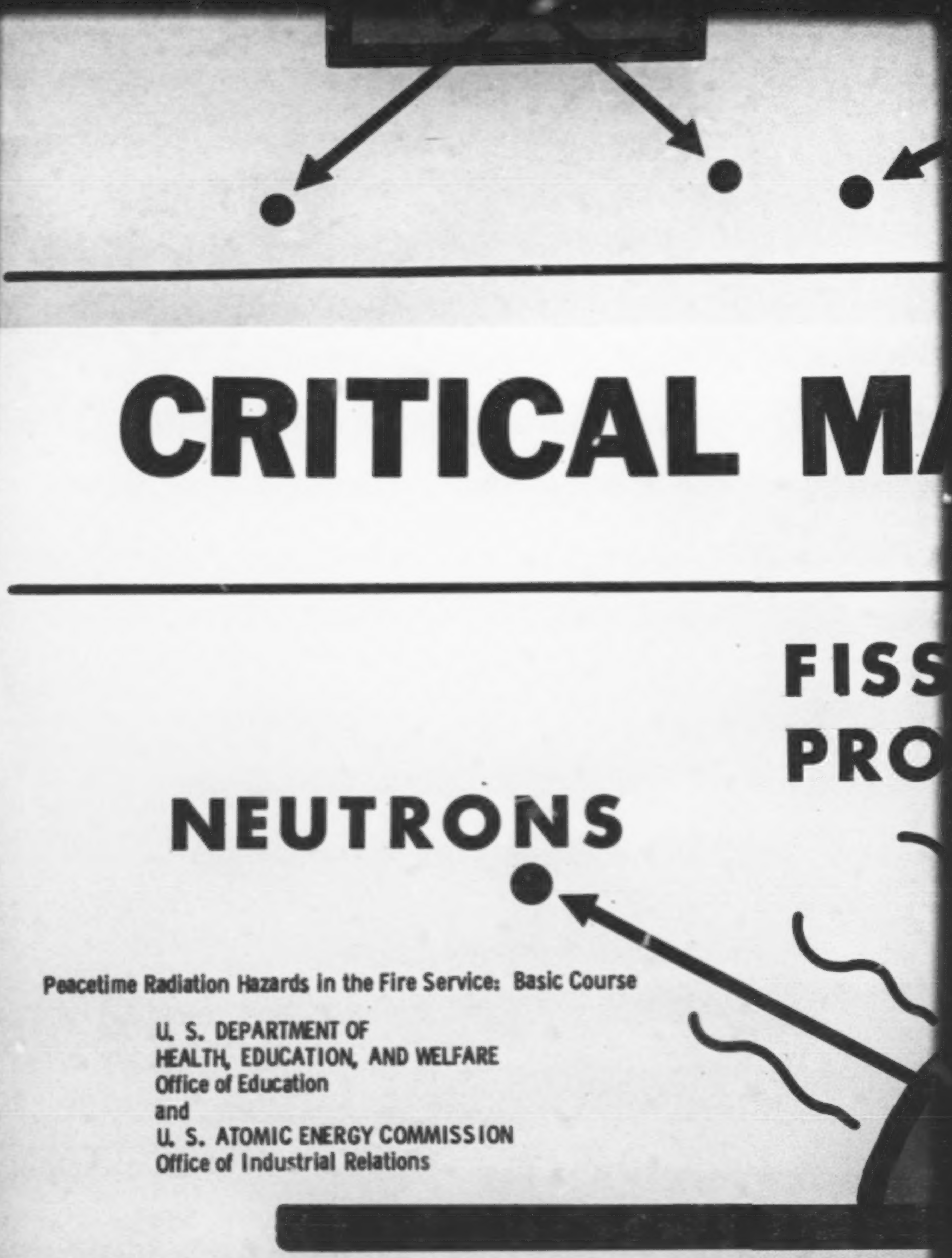

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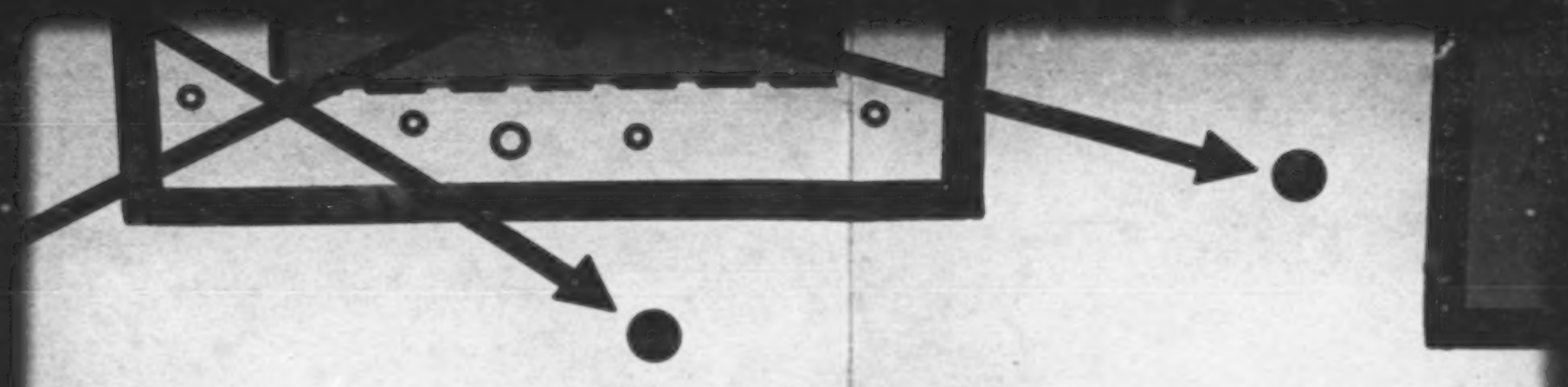

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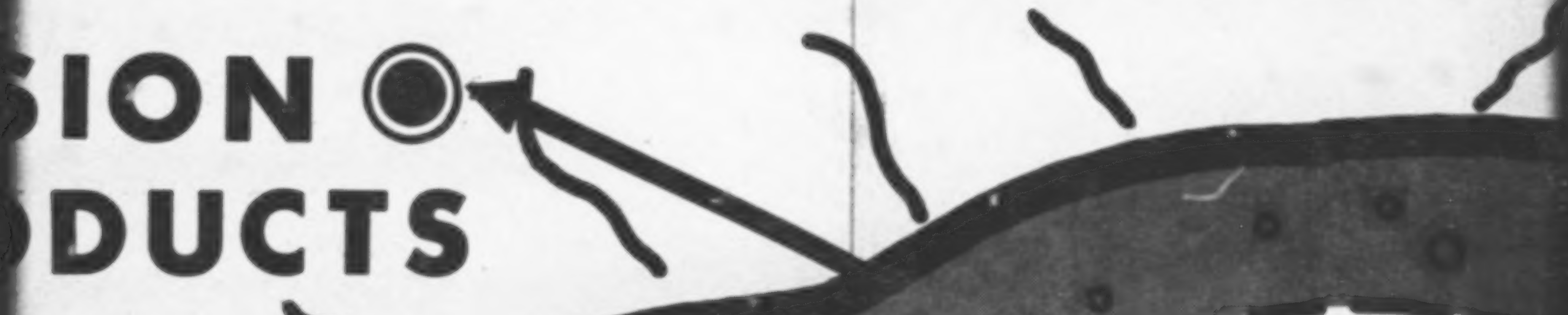

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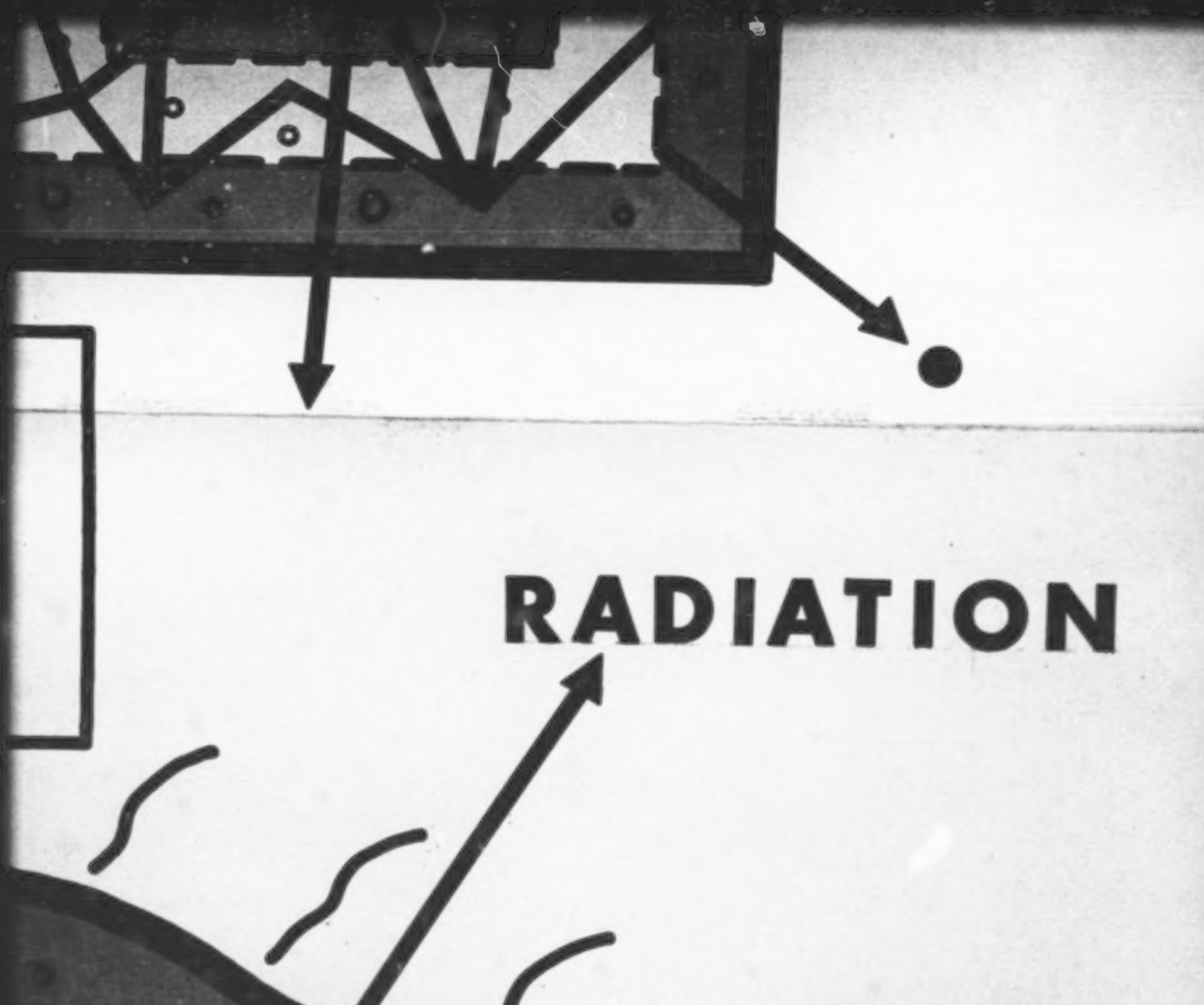

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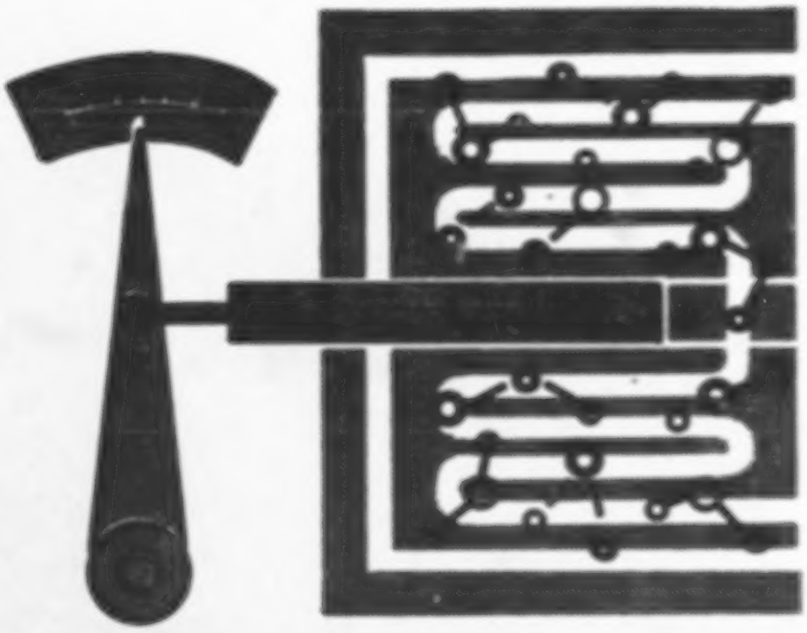
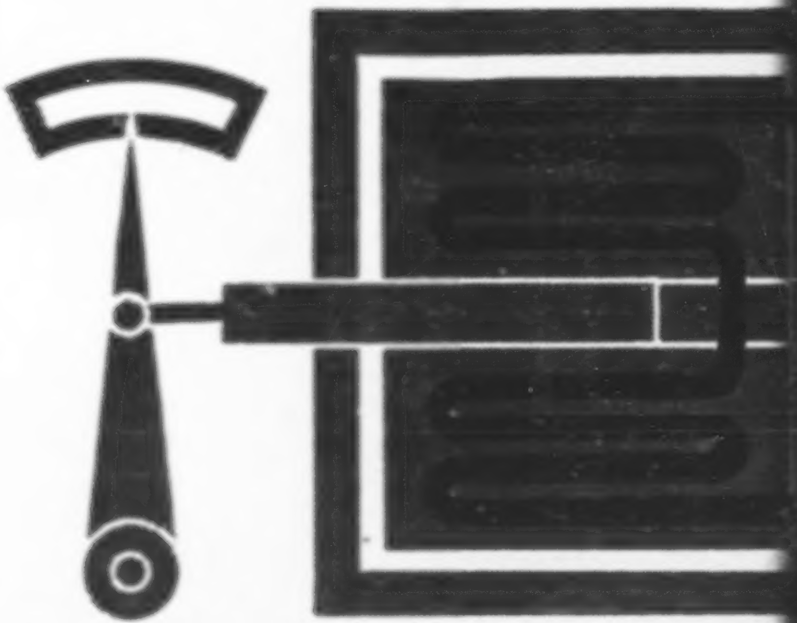
STEP 1.



CONTROLLING CHAIN REACTION

STEP 2



REMOVING HEAT CREATED BY REACT

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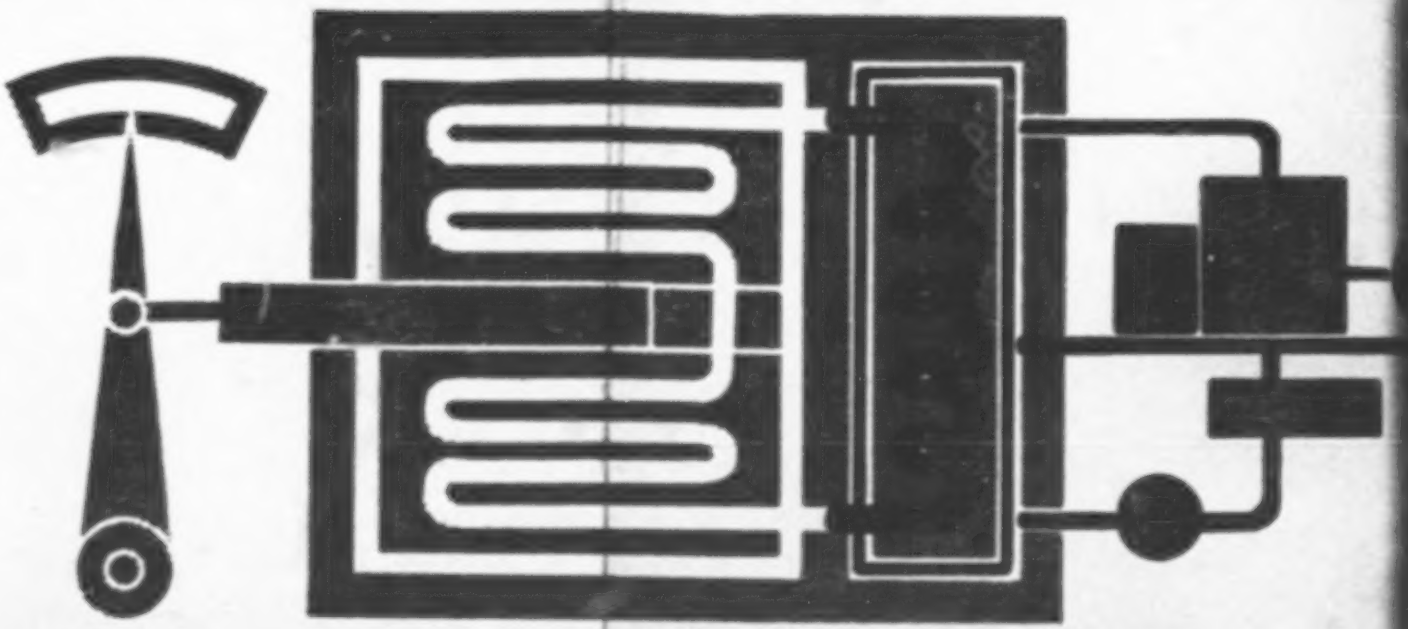

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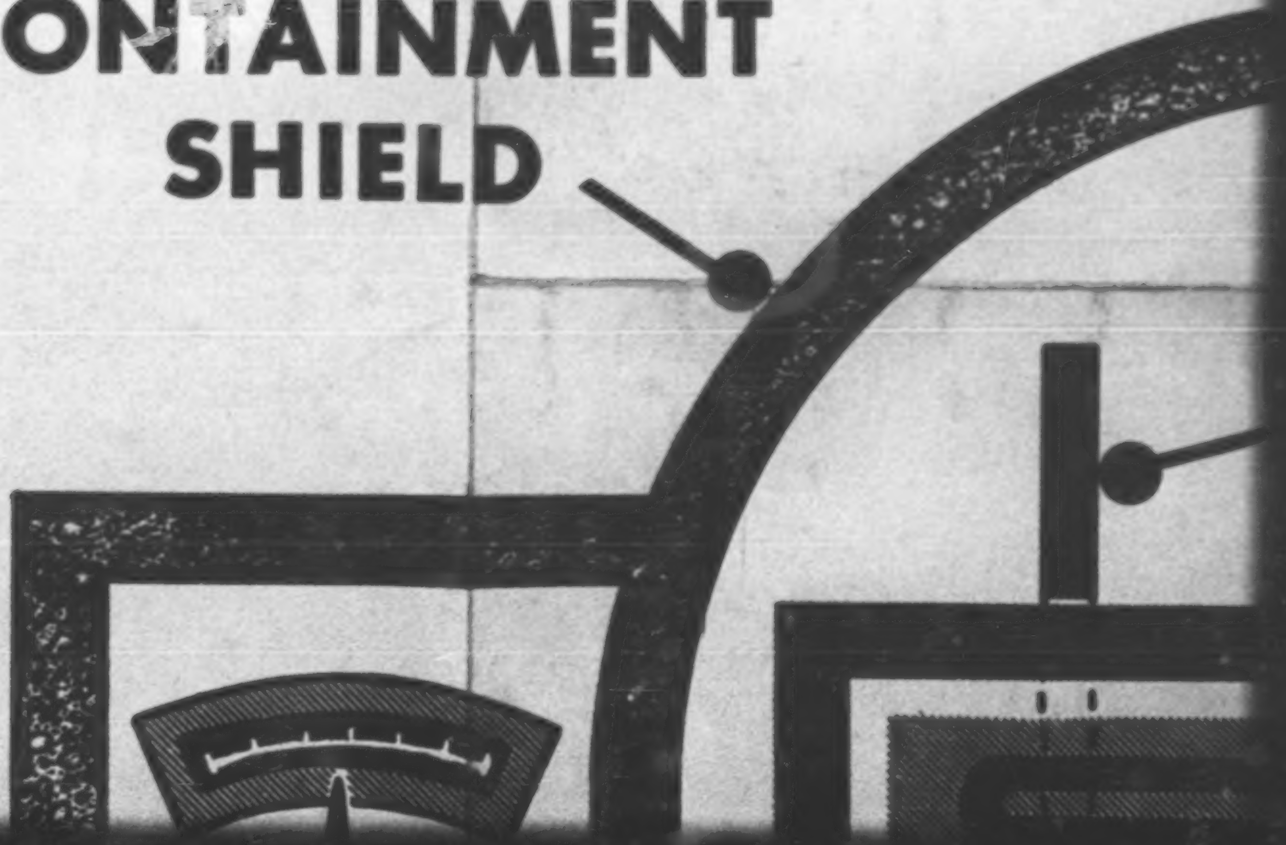

CONTAINMENT SHIELD

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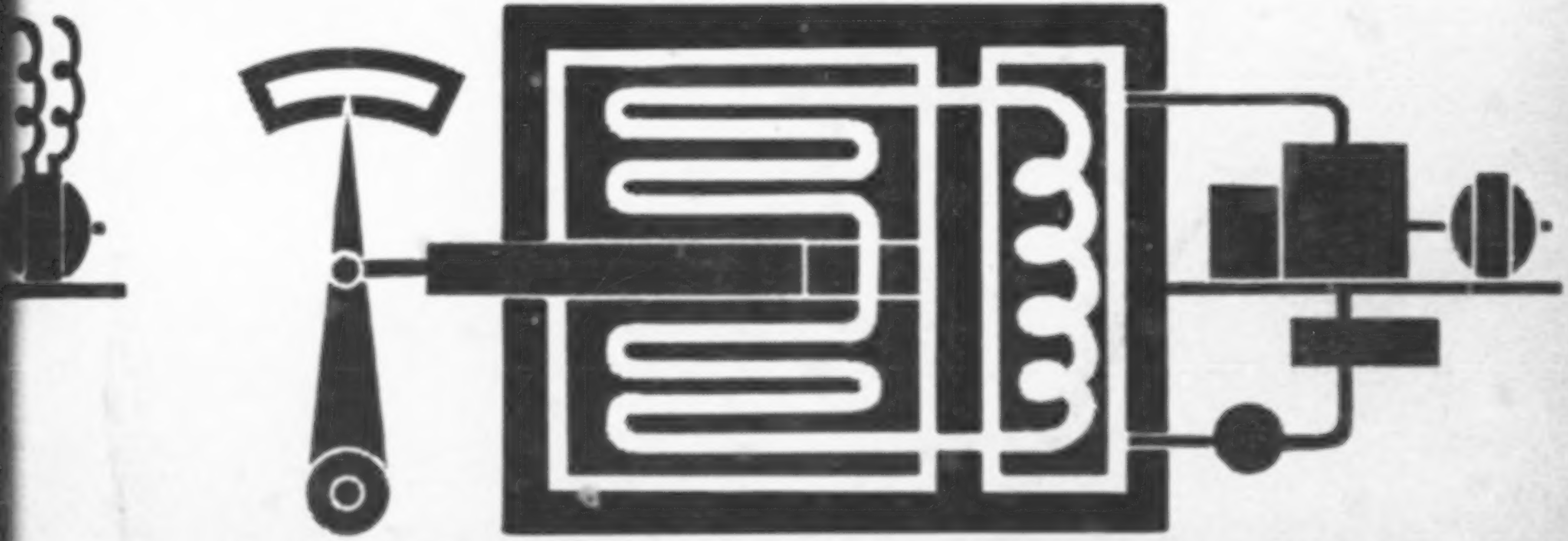
STEP 4....



SHIELDING PROTECTS AGAINST NEUTRONS AND RADIATION

CONCEPT OF

ATOMIC POWER REACTOR

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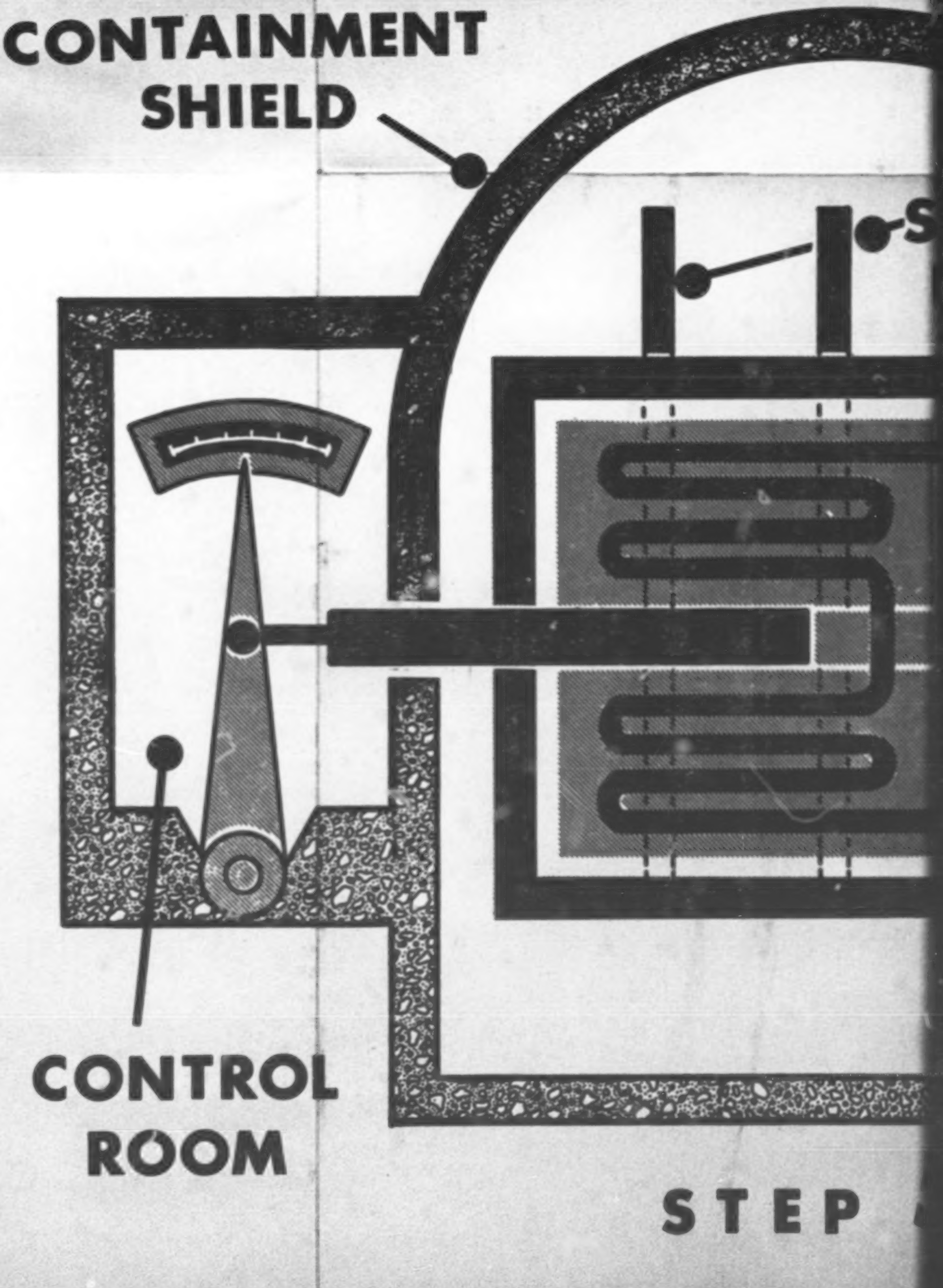
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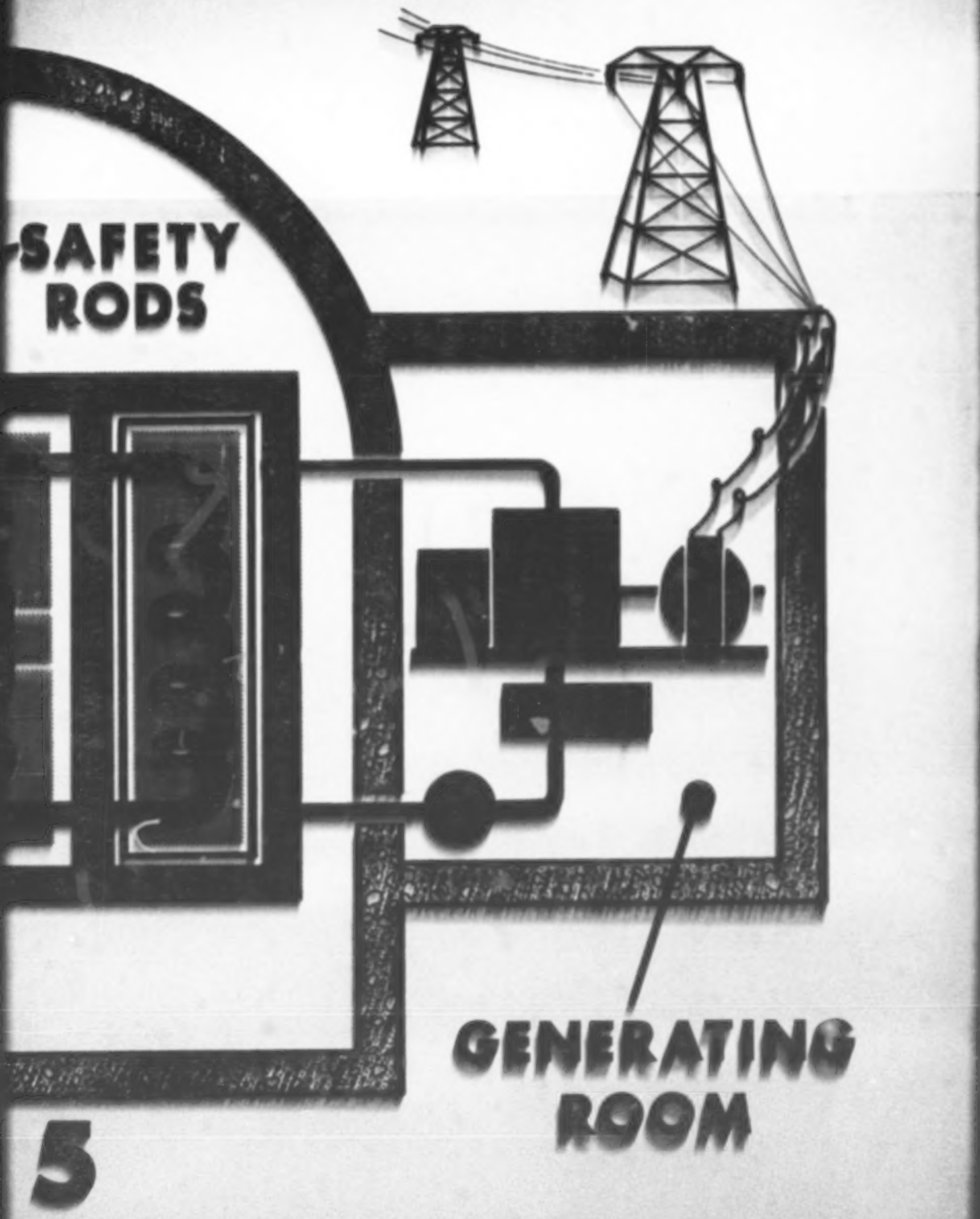

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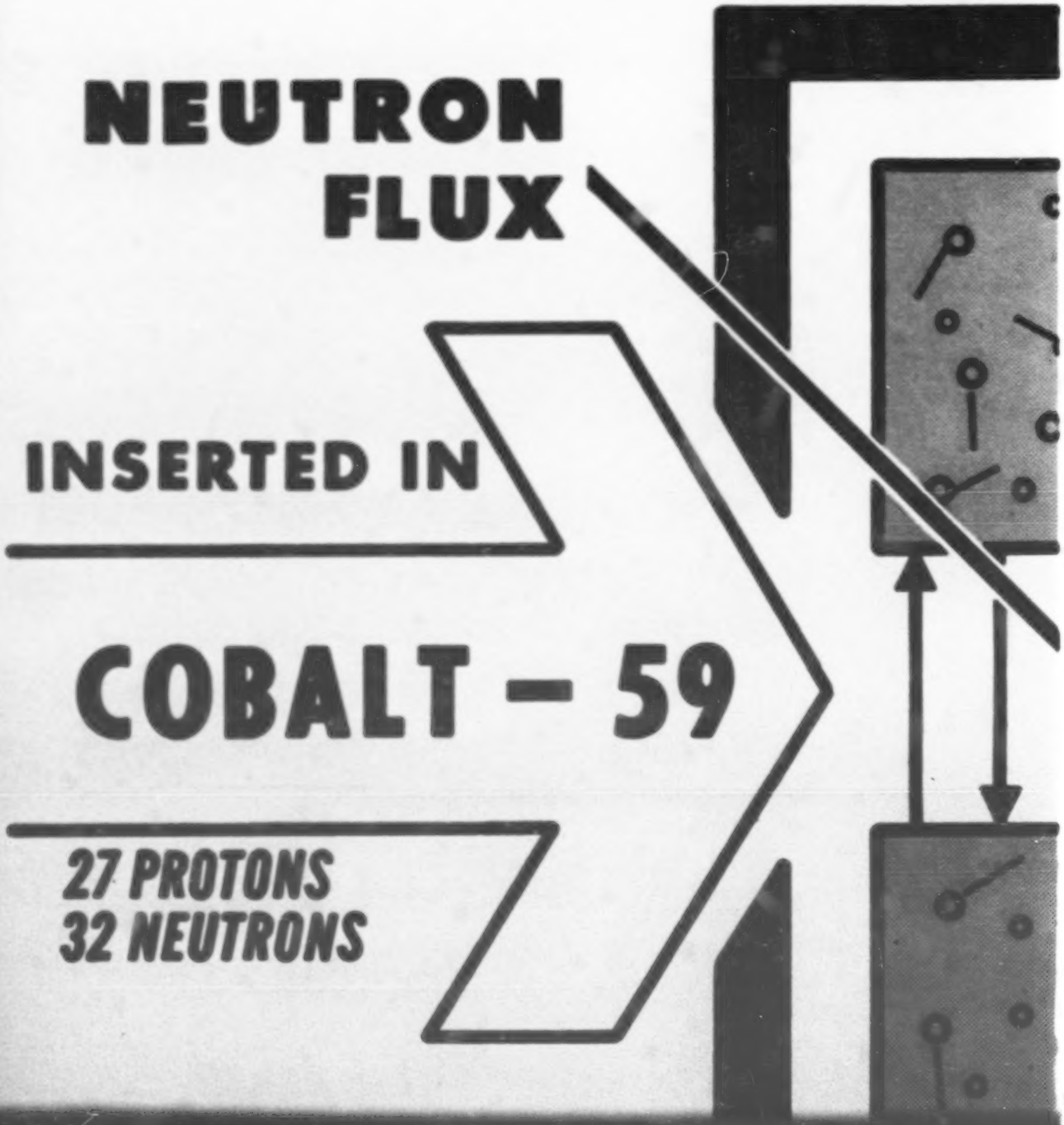

NEUTRON FLUX

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COBALT – 59

27 PROTONS
32 NEUTRONS

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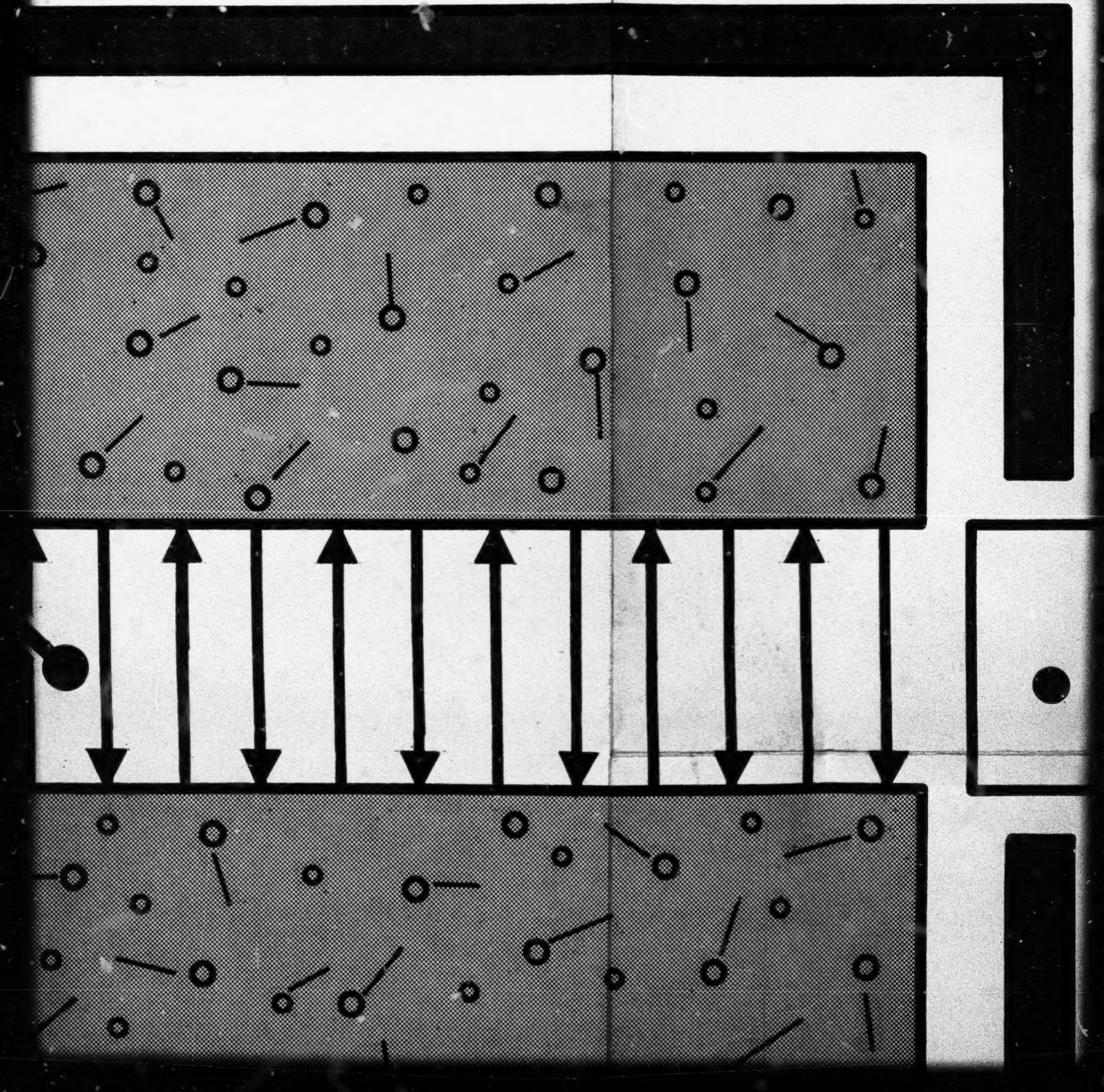

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27 PROTONS
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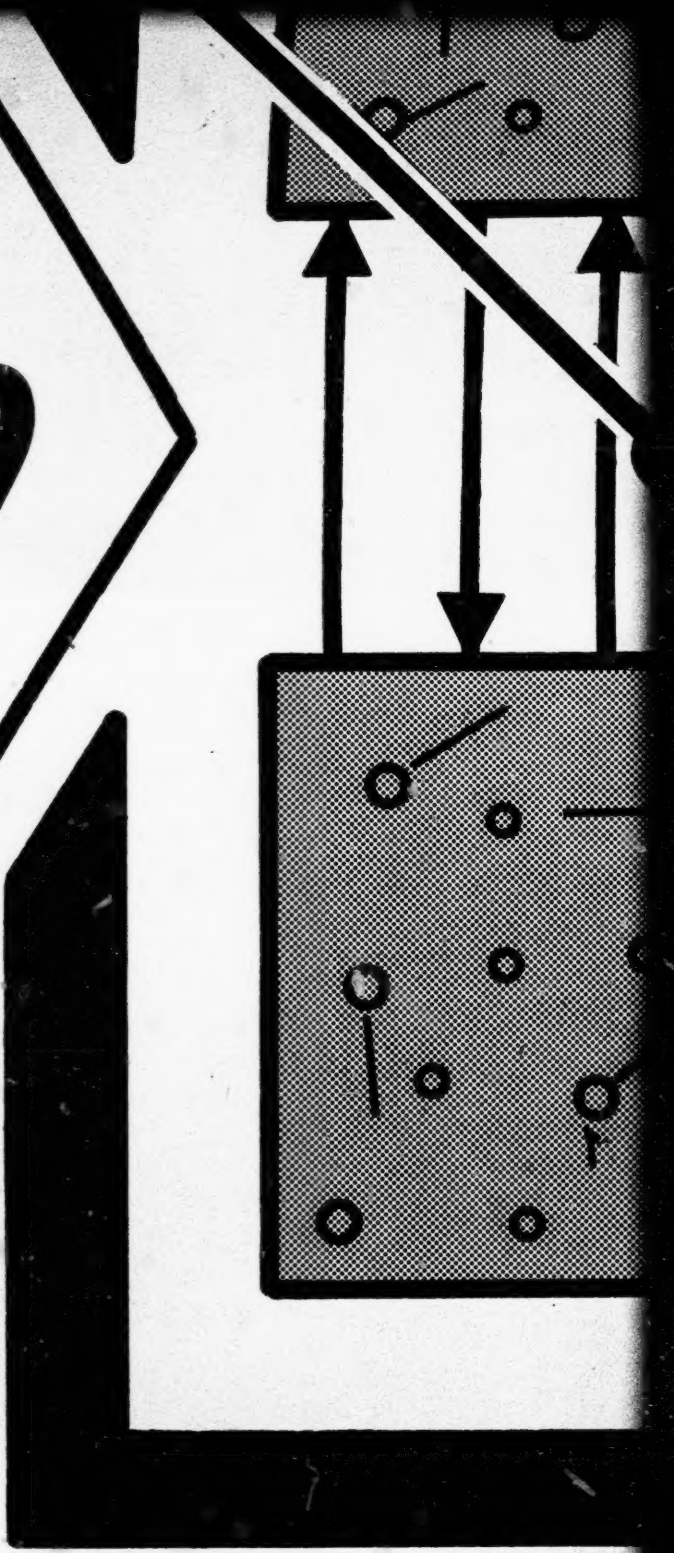

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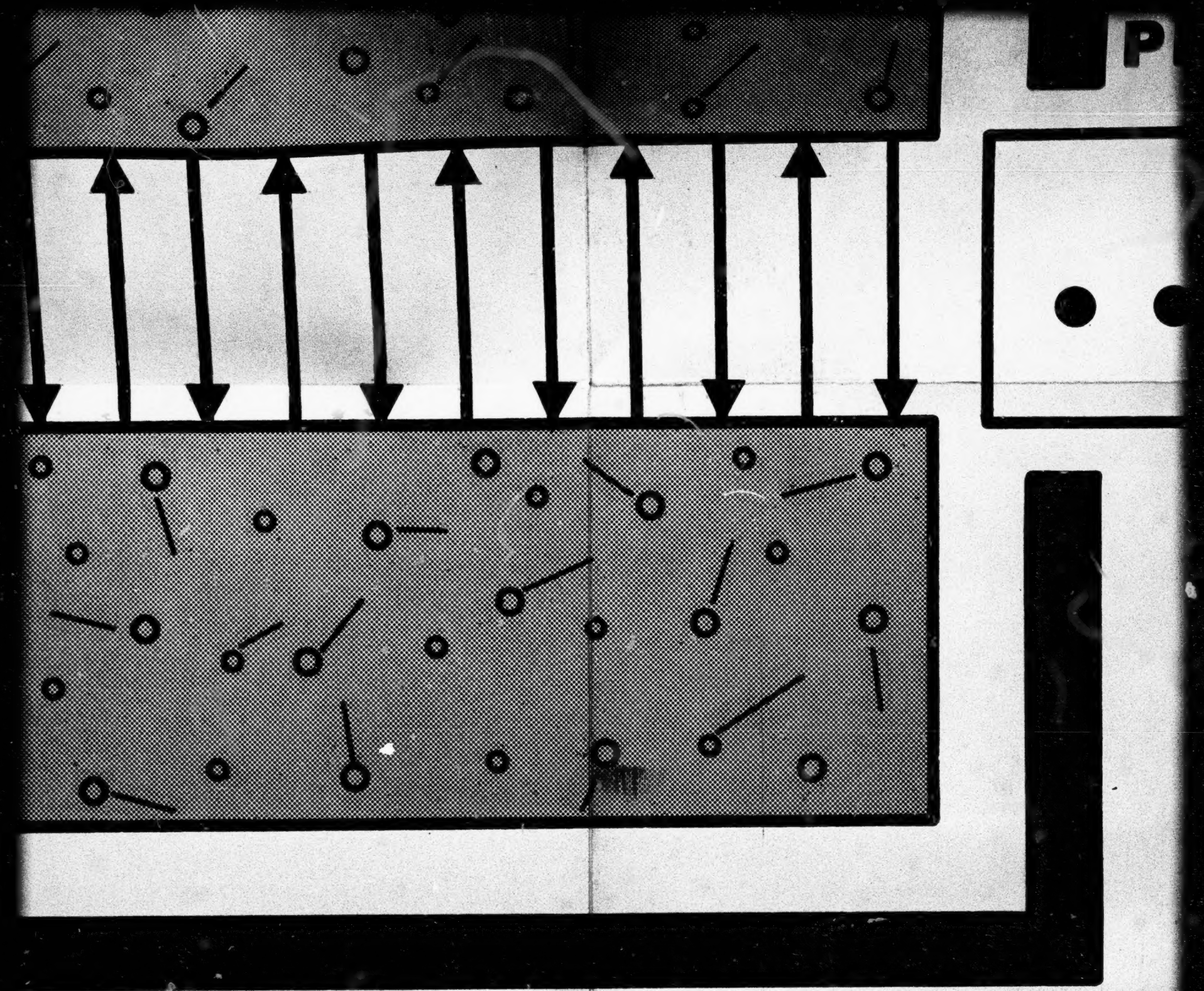

BER OF COBALT – 59 ATOMS BECOME RADIOACTIVE
ENDING ON HOW LONG THE COBALT – 59 IS LEFT
NEUTRON FLUX

KS UP 1 NEUTRON

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27 PROTONS
33 NEUTRONS

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COBALT – 59 – BECOMES COBALT – 60 – AFTER BEING IN REACTOR

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THE REACTOR AND THE

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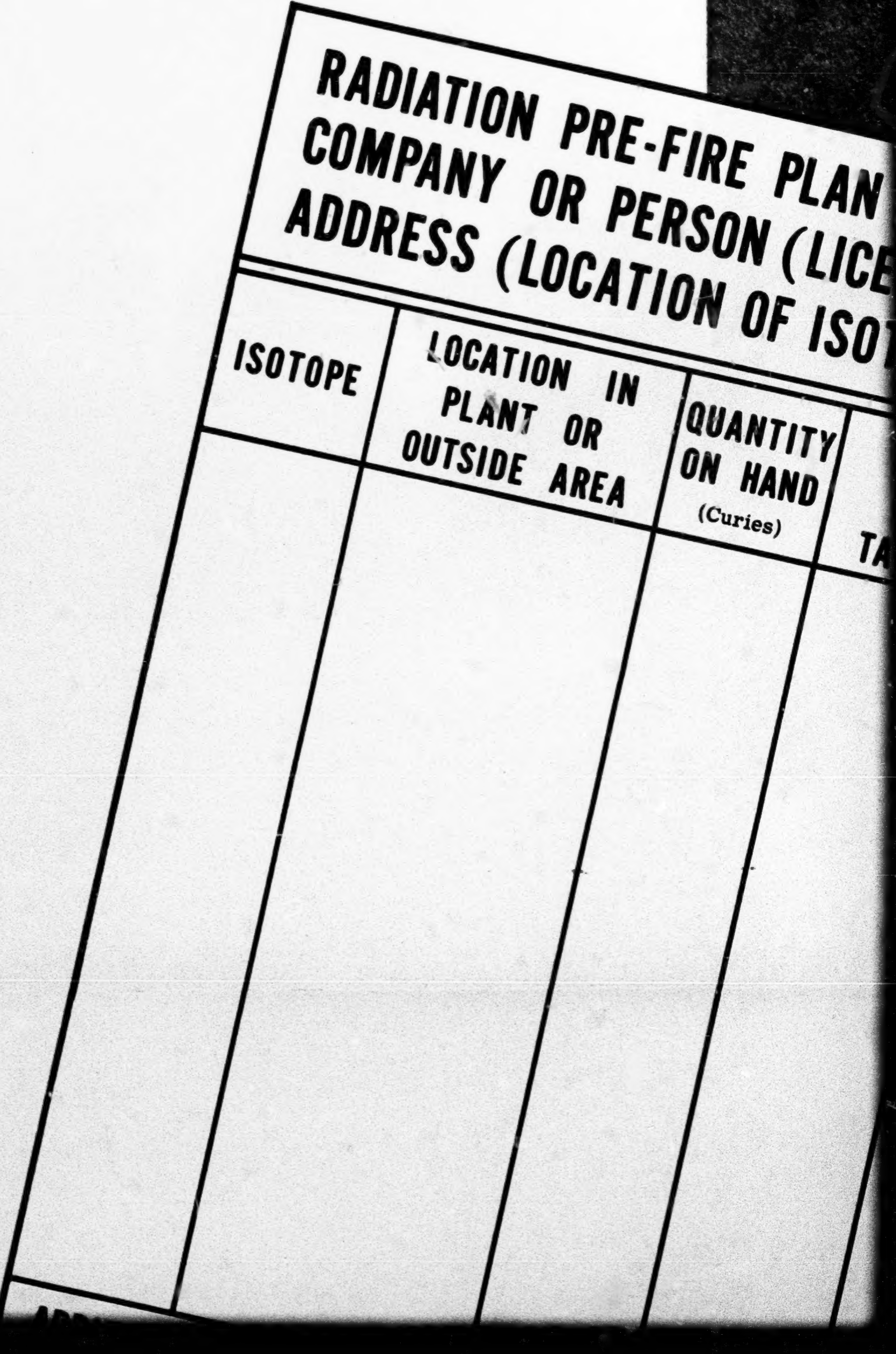

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OTOPES) ____

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HOW CON-AINED	PRINCIPAL RADIATION EMITTED	RADIATION LEVEL OF SOURCE (Unshielded)	HAZARD		REMARKS A
			External	Internal	

OE-84022-21

PLAN

(SUGGESTED)

DEPT. DATE ________

D / OR PROCEDURES

ADDITIONAL INFORMATION: Sprinklers, Valves, Venti
Filters, Fire Walls, Doors
Flammable Liquids, Gases,

NOTE: USE REVERSE SIDE FOR CONTINUATION OF INFORMATI
AND PLAN OF BUILDING

	SOURCE (Unshielded)	External	Internal	REMARKS AND

ing Systems, Ducts,
xits, Water Drainage,
c.

PERSON/S RESPONSIBLE FOR RADIOISOTOPES-TO BE CONTACTED IN EMERGENCY	TELEPH
	PLANT

/OR PROCEDURES

ONE NO.

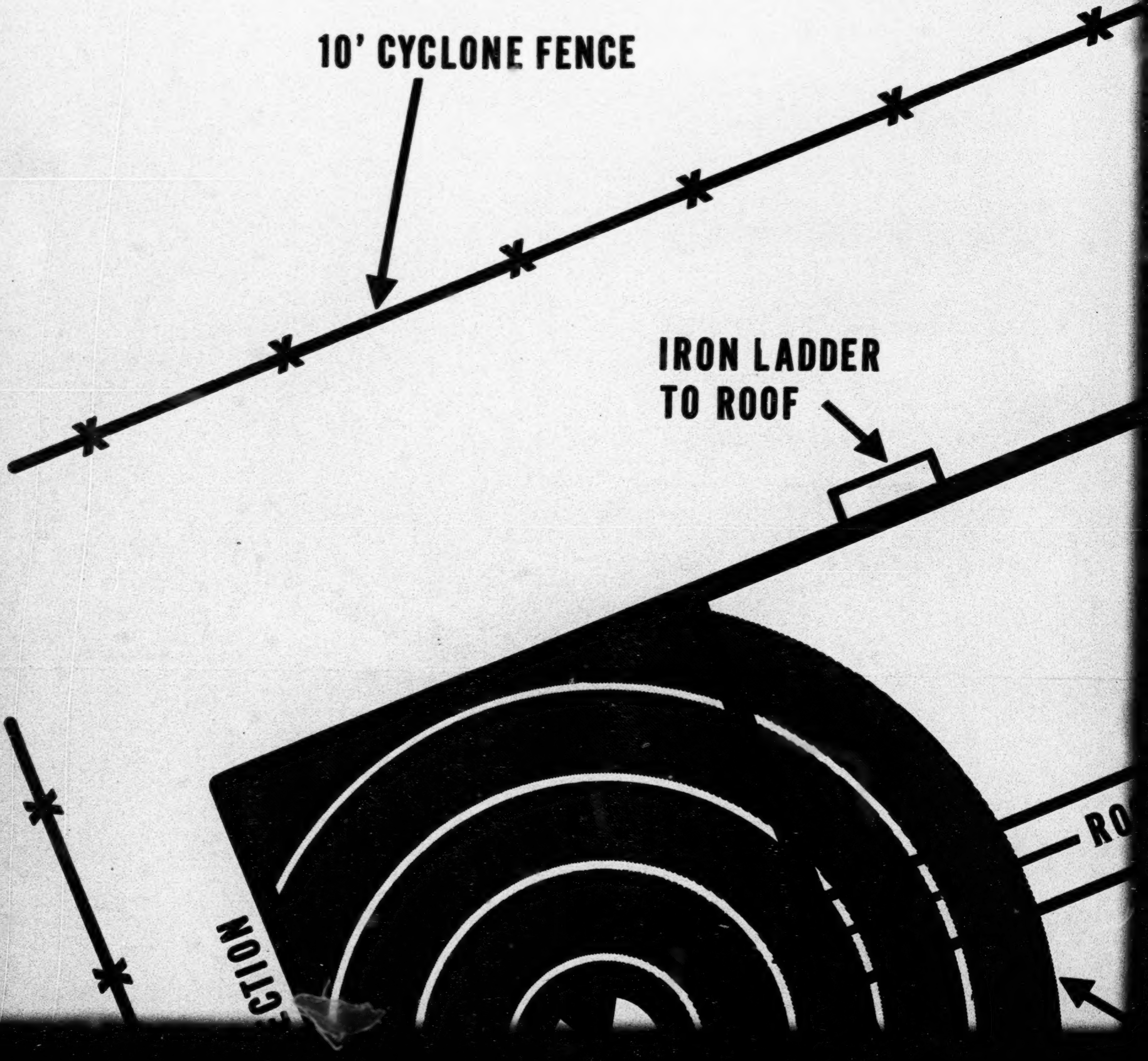
HOME

Peacetime Radiation Hazards in the Fire Service: Basic Course

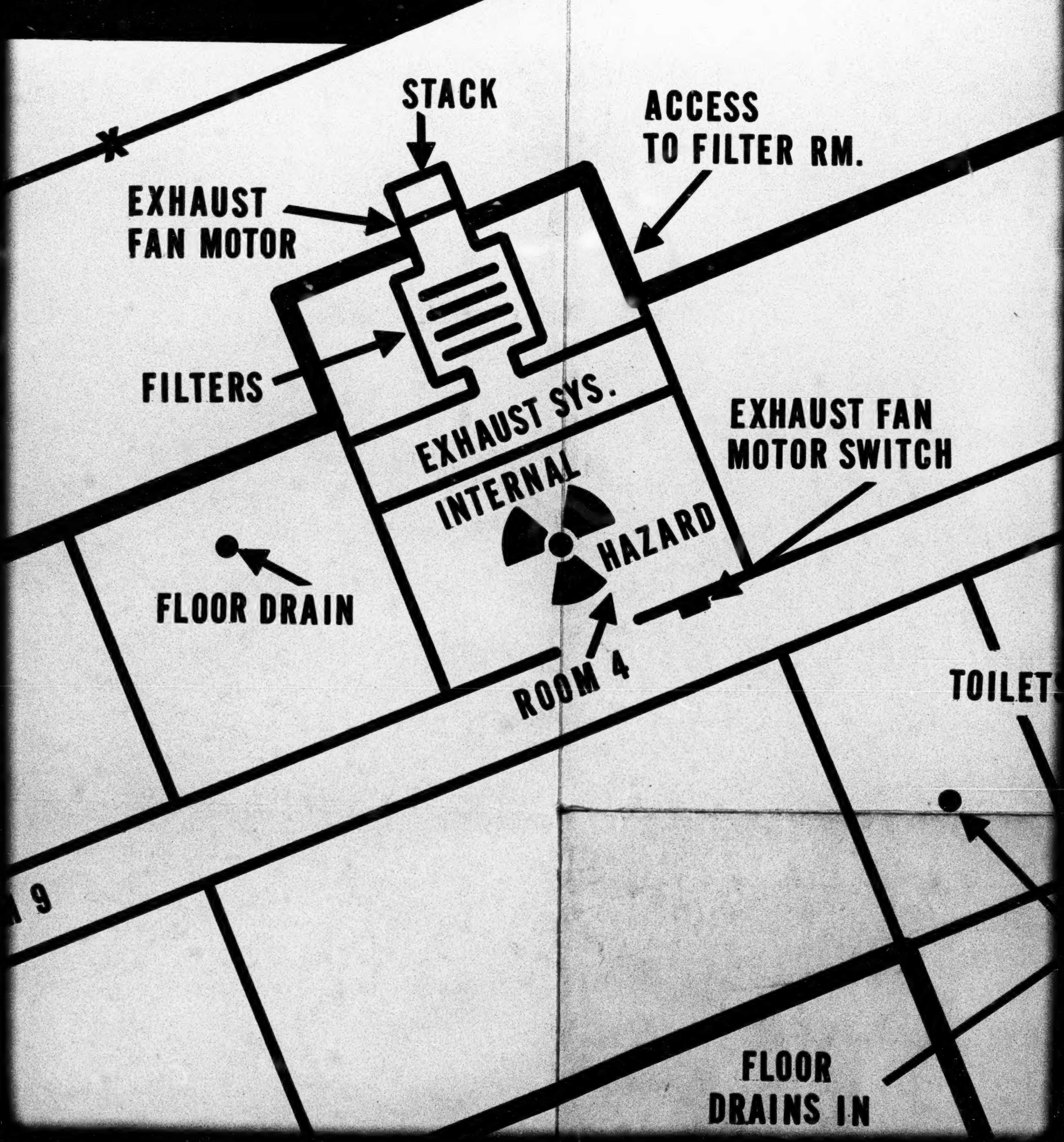
U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Office of Education
and
U. S. ATOMIC ENERGY COMMISSION
Office of Industrial Relations

U.S. GOVERNMENT PRINTING OFFICE : 1961 O—587718

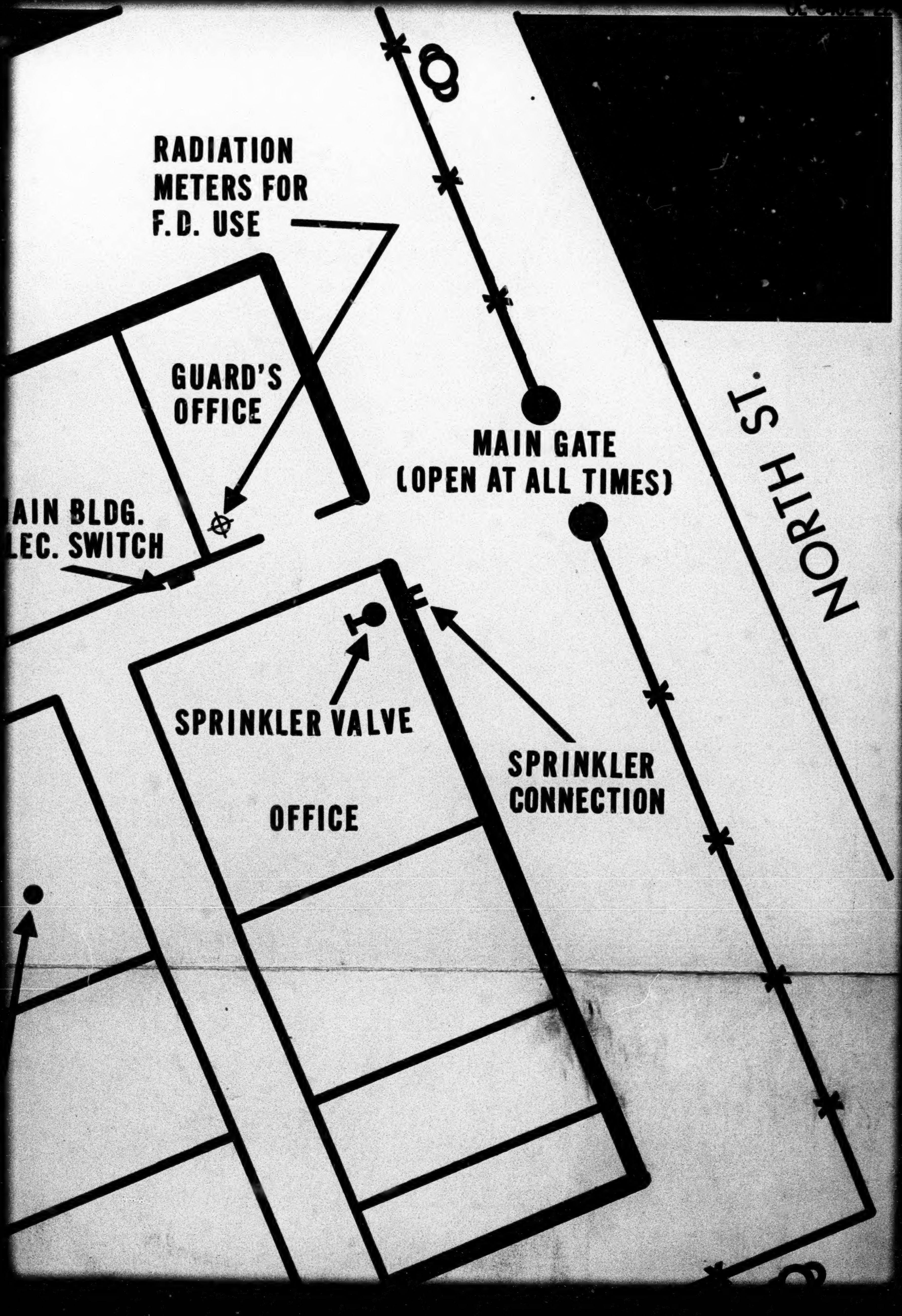
RADIATION PRE-
SKETCH OF BUILDI

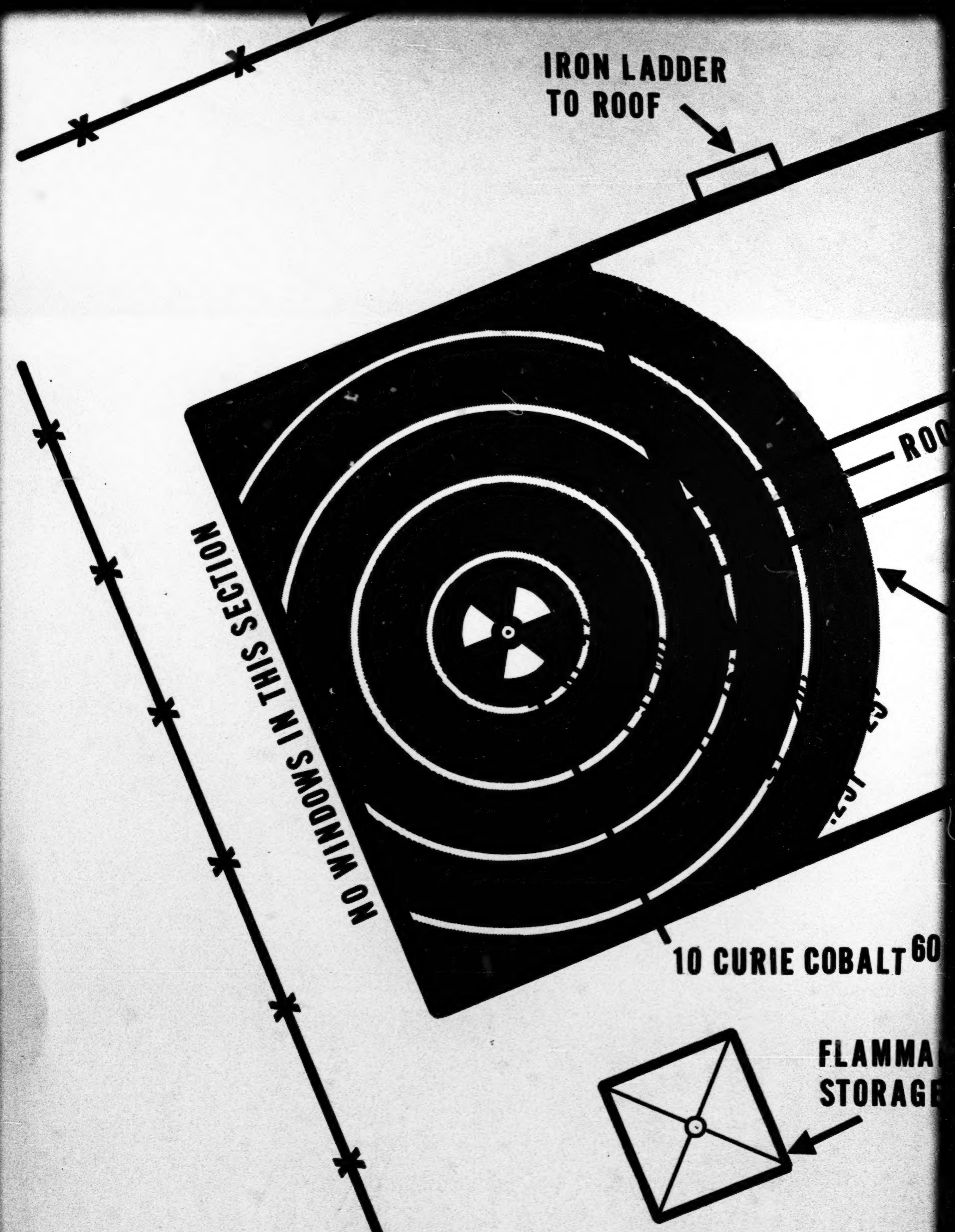


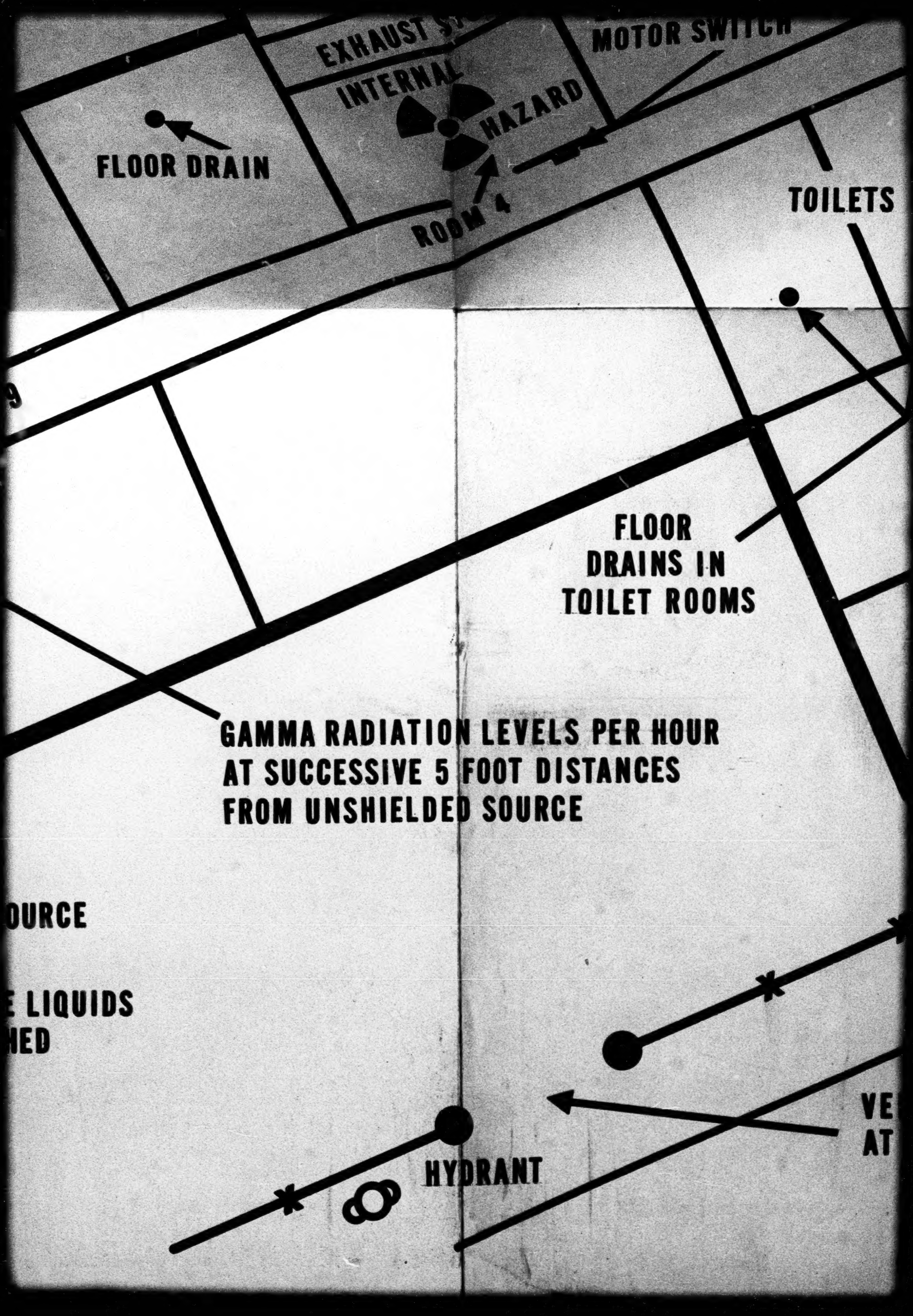
FIRE PLAN
NG

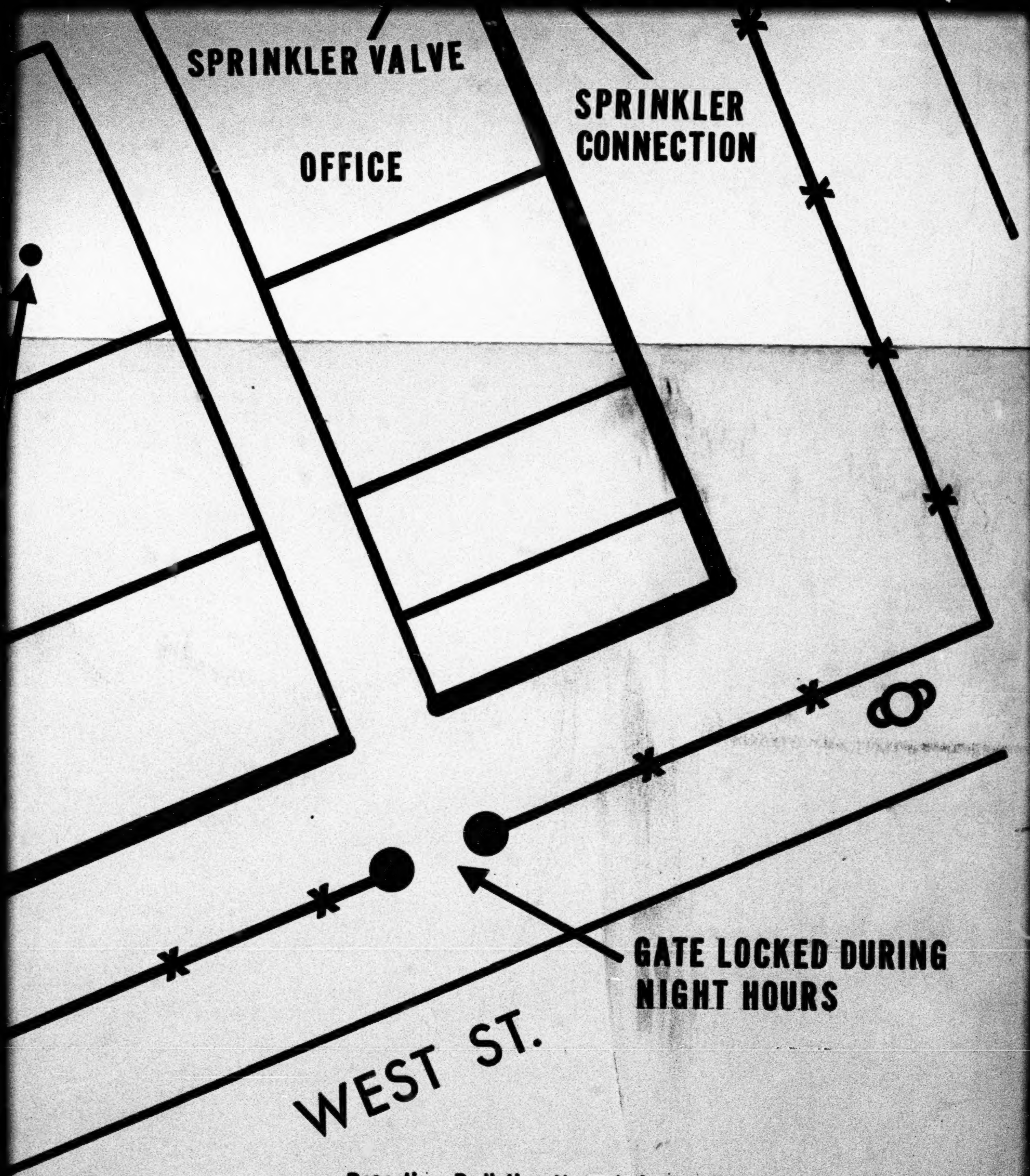


STACK
ACCESS
TO FILTER RM.
EXHAUST
FAN MOTOR
FILTERS
EXHAUST SYS.
INTERNAL
HAZARD
EXHAUST FAN
MOTOR SWITCH
FLOOR DRAIN
ROOM 4
TOILET
9
FLOOR
DRAINS IN


RADIATION METERS FOR F.D. USE
GUARD'S OFFICE
MAIN GATE (OPEN AT ALL TIMES)
NORTH ST.
AIN BLDG.
LEC. SWITCH
SPRINKLER VALVE
SPRINKLER CONNECTION
OFFICE


IRON LADDER
TO ROOF
NO WINDOWS IN THIS SECTION
ROO
10 CURIE COBALT 60
FLAMMA
STORAGE


EXHAUST ST
MOTOR SWITCH
INTERNAL
HAZARD
FLOOR DRAIN
ROOM 4
TOILETS
9
FLOOR
DRAINS IN
TOILET ROOMS
GAMMA RADIATION LEVELS PER HOUR
AT SUCCESSIVE 5 FOOT DISTANCES
FROM UNSHIELDED SOURCE
OURCE
E LIQUIDS
HED
HYDRANT
VE
AT



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